ESTABLISHED IN 1872

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With Which Is Combined

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Badger Paper Mills Position Improving

Production During Autumn Months Maintained At Practically Full Capacity — Satisfactory Volume of Orders Received and Booked Ahead—Company Plans to Further Diversify Its Products—Sound Financial Betterment Accomplished In Three Years Since Reorganization, Under Management of President Meyer

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 30, 1931—Gradual improvement of the position of the Badger Paper Mills, Inc., Peshtigo, Wis., is shown by the production of the Fall months. September and October were among the company's best months, with operations practically at full capacity and November will also be a good month. A good volume of orders has been received and booked ahead for waxed bread wrappers, kitchen paper and drawing paper. The company is planning further to diversify its line.

In addition to paying dividends on preferred stock, the company has been without bank debts for some time and has paid off before maturity $127,500 on an issue of $400,000 of 10-year first mortgage bonds, leaving only $272,500 of these outstanding. Preferred dividends are being earned by a safe margin and the assets are now six to one against liabilities. All of this has been accomplished in three years since the company was reorganized from the bankrupt Peshtigo Paper Company, under the management of E. A. Meyer as president.

Hoberg and Northern Guarantee Employment

The Hoberg Paper and Fibre Company, and the Northern Paper Mills, Green Bay, Wis., have agreed to guarantee employment to their workers until May 1, 1932. In doing this, they furnished an example for other industrial plants in Green Bay in what is known as a "twelve point program" to meet the unemployment situation and restore confidence. J. M. Conway, president of the Hoberg mill, is one of the leaders in the movement endorsed by sixteen industries by which to keep a much larger number of men working. He is also a member of the special unemployment commission appointed by Gov. Philip F. LaFollette, of Wisconsin. The Northern and Hoberg mills are among those cited as having attempted to keep practically a full force of workers during the last two years, even at times making large quantities of stock for which there were no immediate orders.

Forest Production Movements

Forest production on a mass scale to supply the State adequately in the future with pulpwood and timber is outlined by Haskell Noyes, Milwaukee, newly appointed chairman of the Wisconsin Conservation Commission. He favors an amendment to the state constitution permitting a zoning plan which will determine what lands are to be used exclusively for forestry in the future instead of attempting to use them for farming when not suited. He believes the Federal Government should not stop with a forest preserve of 1,000,000, which it is authorized to purchase. The Government has 250,000 acres now. He also urges that the state's 200,000 acres of forests be developed eventually to 5,000,000 acres, and that farmers be encouraged to grow wood lots. Financing of the work out of state trust funds is advocated, to be used for constructive forestry that would produce pulp wood and timber and pay back a good profit on the investment.

Another movement being given consideration by the commission through R. B. Goodman, Marinette, Wis., a member of this body, is to gain control of 368,000 acres of land now held by the commissioner of public lands through its purchase from school trust funds. The commission is unable to plant or supervise growth on these properties, under the persent laws, and believes a real opportunity for reforestation is being sacrificed.

News of the Industry

Claybourn Process Corporation, Milwaukee, manufacturers of fast color presses for waxed paper, wrappers, etc., reported that this year is way ahead of 1930 and better than 1929, according to L. W. Claybourn, president. The company is running right up to the hilt filling orders for giant color presses and November business will total above $100,000. The sixth press is being shipped to the Shellmar Products Company, Chicago.

Recent heavy rains have raised the water level of the Fox and Wisconsin Rivers, the paper mill power streams, to the highest point they have been for more than a year. This assures relief from low water next summer, since the spring thaws and rains will increase the amount further. Water levels have not reached normal but show much more favorably than they did previous to the drought of the last two summers.

An audience of two hundred, largely employees of the Consolidated Water Power and Paper Company, attended last week's session of the annual safety school at Wisconsin Rapids, Wis. The speaker was Louis A. Crittenton, Chicago. He described the safety movement as a

(Continued on page 56)

Philadelphia Paper Market Fairly Active

Demand for Various Standard Grades of Fine Paper Moderately Persistent—Wrapping Paper Moving More Freely, With Approach of Yuletide Holidays, Although Price Situation Continues Unsatisfactory—Paper Stock Quotations Weak

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 30, 1931.—Though the trade is more optismistic in regard to the immediate business situation, there is cause for complaint over the tendency of prices to sag, as mills and distributors campaign for tonnage to hold over the year end, and, in a few cases, for early 1932 purchases. With the break in kraft there followed many revisions in cheap grades of book papers, sulphite bonds and ledgers, tissues and waxed papers. Converters of paper products are likewise adjusting their products to the price situation and much competition is noted. Paper box manufacturers are becoming more active, as they place larger orders for box board and fancy grades of papers for covers.

Wrapping papers are in demand, and as the holiday approaches, there is greater consumption of allied lines in corrugated products and containers. Fine papers hold fairly well but move in small but more frequent lots. Mill agents and dealers handling tonnage lots of fine papers report consumers buying more freely, as prices are made more attractive for ready orders. Only a few grades of higher priced paper stocks are moving, owing to scarcity of supplies. The cheaper grades continue to lag at rock bottom prices, with abundant stocks in warehouses.

Paper and Cordage Association Meets

Officers for the coming year were nominated at the meeting of the Philadelphia Paper and Cordage Association, held at the Adelphia Hotel last Friday, and plans for the coming Christmas celebration discussed. The officers nominated were: President, Stanleigh C. Brower, J. L. N. Smythe Company; Vice-President, Harold Newell, American Manufacturing Company; Secretary, Charles Ryan, C. Moore & Co.; and Treasurer, D. Crimmins, Edwin H. Fitler Company, all of unanimous choice. All officers served in the past year with the exception of D. Crimmins, and were moved ahead an office in the nomination. William Edkins, president of the association, presided. The Christmas Party of the association will be held at the Adelphia Hotel at noon December 18 and will be in the way of a dinner for the Salvation Army and children, with distribution of toys and wearing apparel to follow the turkey dinner.

McDowell Paper Mills on Glassines

With the growing favor of combinations of glassines and waxed papers with cellophane, the McDowell Paper Mills, of which Charles McDowell is head, has been increasing its production on glassines of all descriptions. There is fair demand for the many lines of embossed and plain glassines in colors and white which the McDowell mills produce in speedy service to the trade and converters, through the rebuilding and modernizing of the equipment and recent electrification of units and power plant.

Bennington Wax Paper Co. Introduces New Line

With the announcement of the newest addition to the Bennington Wax Paper Company's lines, the Philadelphia trade is stocked with the latest product introduced here by the local manufacturers agent, Charles T. Elliott, Jr., scion of a family long linked with the Quaker City paper distribution industry, with offices in the Fidelity-Philadelphia Building. It is the newest cleaning paper, an entirely novel product which maye be used for dusting, cleaning and polishing any household utensil or furnishing, either metallic, wood, or other material, and which is non-scratching and absorbent. It is stocked here in the customary sizes of 25 sheets for 10 cents and 65 sheets for 25 cents. The new product is known as "Daz".

Paramount Adopts Cellophane Trade Mark

Having recently established a new department in its bag plant at 3rd and Callowhill streets, the Paramount Paper Products Company, Inc., has adopted a trade mark for its cellophane and cellophane combinations with glassines and waxed paper bags and wraps, under the title of "Visual-eye-zed" products. The firm recently equipped the bag plant for the manufacture of cellophane and combination coffee bags and general line of bags and wraps, in plain and colored imprints and designs. The new products augment the former glassine bags and wraps.

New Coated Book Paper for Collins

A new coated book paper has been added to the A. M. Collins Manufacturing Company's lines of printing and direct mail advertising papers. The firm, with plant at 3rd and Columbia avenue, and offices at 1518 Walnut street, places on the market December 1 its latest paper in white and ivory coated book and five colors of covers. It is especially useful for direct mail advertising. The new papers are known as Wove Tone cover and book papers.

Saxe Paper Co. To Add Specialties

Another exclusive line of paper specialties will be stocked by the Saxe Paper Company, old established wrapping paper and specialty house, 320 Race street. The firm is now negotiating to take over the new line to be added next month when Nathaniel Saxe, head of the firm, will distribute the products as local agents.

Hampden Introduces New Box Makers Papers

J. A. Stuckey, Philadelphia representative of the Hampden Glazed Paper and Card Company, Holyoke, Mass., with offices in the Bourse Building, is introducing the latest fancy box makers cover papers made by his concern. They are highly colored modish designs of novelty papers, known as Multicolor, Bas-Relief, Suedes and Glazed Chintz. They now are being introduced to the dealers and box makers and sample books are ready for release.

Shenango-Penn In New Quarters

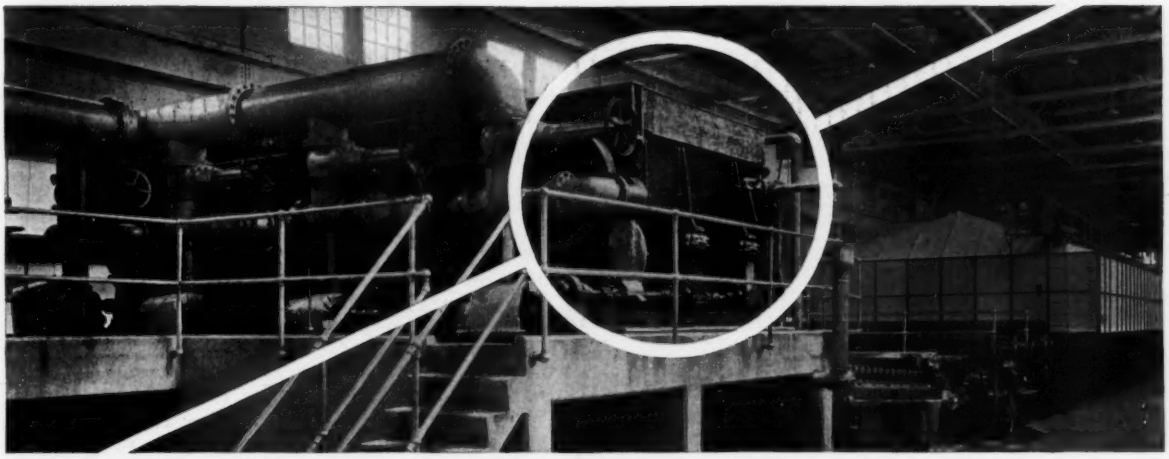
The Shenango-Penn Mold Company, of Dover, Ohio, announces the removal of its Philadelphia sales office from 1023 Widener Building to 1018 Girard Trust Company Building. The Adair-Day Corporation will be in a position to furnish the same prompt attention to all inquiries and orders from this office, as in the past.

Fewer Fire Losses

Forest fire losses in New Brunswick this year were unusually low and amounted to $7,621, with $430 additional for buildings and $195 for forest products.

According to returns received by the Minister of Lands and Mines, the total burned area amounted to 3,537 acres, which may be divided into 1,256 private lands and 2,281 Crown lands. From a commercial standpoint, the 3,537 may be reduced to 2,380, the remaining 1,157 acres not having been covered with forest lands.

At this Point



extra quality costs least

No other operation in the mill has a more immediate effect on paper quality than *screening*.

Yet few operations cost less. **In the total cost of the paper, there is little or no difference between ordinary screening and the best . . . between your present screens and the *right number of screens, fitted with the right plates* for *turning out the cleanest possible stock.* In many mills, a moderate increase in screening capacity, with a corresponding reduction in screen plate slot size, has proved the cheapest possible means of improving quality.**

Write; let us help work out the possibilities in your mill.

BIRD SCREENS

BIRD MACHINE COMPANY BIRD MACHINERY **South Walpole, Massachusetts**

5203

Ontario Paper Manufacturers Well Employed

Majority of Plants Making All Grades of Fine Paper Are Operating Close to Capacity—Light Weight Papers Moving Freely Under Good Holiday Demand—British Import Duties Lead to Inquiries for Fine Grade Papers, Wrappings, Etc.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., November 30, 1931—While the month ended with somewhat spotty conditions prevailing in wholesale paper circles in Toronto, the total volume of pre-Christmas business promises to stack up well. Certain it is that there is a much better feeling in the trade than there has been for some time past and this has been caused by actual improvement that has been recorded during the past several weeks. Particularly is this so in regard to fine papers, for which the demand is keeping up fairly well. There is quite a good call for book, bonds and writings, and fine papers generally are being sold in increasingly large quantities. November produced a fair volume of business for the distributor of fine papers of the lower grades and there is now a disposition on the part of the consumer to branch out and buy the higher grades of stock. Demand appears to be setting in nicely for the better classes of fine papers and it looks just now as if the year would close with a record of business at least equal to that of last year. Business generally has been on the up-swing in Canada for several weeks past and the paper trade has participated in it to a marked degree. The printing trade is supplying more business that it has in some months past and most of the larger plants in Toronto and other large centers are quite busy. Most paper wholesalers are inclined to the view that the present tendency towards firmness in the paper market is permanent and that the worst of the depression is now over.

Enquiries Coming From Overseas

The new duties of fifty per cent, desired to prevent dumping of foreign goods in Great Britain for unfair competition with home industry, is having its effect on the Canadian paper trade as indicated by the fact that a number of the Canadian mills have been receiving enquiries from Great Britain for prices and terms on shipments of fine grade papers, wrappings, kraft paper, etc. Although the Canadian mills will find it difficult to compete with some of the foreign markets in most paper lines, yet there is a prospect of business in some paper lines developing from the British protective tariff, and some of the mills in this country are looking for some nice export business to the Old Country as soon as all tariff details are available. In the meantime domestic business with the Canadian mills is on a satisfactory basis and is gradually improving in volume. Mills making all lines of fine papers are well employed and in most cases are operating close to capacity. Good news and some good business is coming out of the Canadian West for several of the mills and satisfactory orders are being placed with Ontario and Eastern Canada distributors. Light-weight paper manufacturers in Ontario are doing a steady business under a good pre-Christmas demand for novelty and standard lines of tissues and there has been a fairly substantial pick-up in the envelope trade, although the paper converting trade generally continues dull. The paper box industry is somewhat sluggish and beyond a fair demand for standard lines of folding, set-up and corrugated boxes, business for the paper box manufacturers did not develop until too close to Christmas to produce any great volume. The board mills for the most part continue on part time, with one or two mills doing somewhat better than that, and the whole operating at considerably below capacity.

Coast News Mills Drop Prices

While news print prices in the Ontario mills remain unchanged, the industry in the province is interested in the news that comes from the Pacific Coast, where the newsprint mills have decided on a further reduction in quotations. Contracts for news print are now being closed at a base price of $50, delivered at major Pacific Coast ports. This cut affects Powell River Company, operating a 650-ton mill at Powell River, and Pacific Mills. Canadian subsidiary of Crown Zellerback Corporation, with mills at Octan Falls of a rated capacity of 250 tons. The new prices, which become effective January 1, 1932, represents a drop of $8 a ton from the present price of $58 per ton established a year ago. Prior to that time the "going" coast price on news print had been $63.50. The present price, therefore, represents a drop in the price of news print of $13.50 in a year's time. It is understood that the $50 price is protected to the end of 1933 and that a price not to exceed $58 is guaranteed for 1934.

Chinese Orders Filled In the West

Meanwhile coast mills are finding the Oriental market somewhat complicated by reason of the exchange situation. Suspension of the gold standard by Norway and Sweden has enabled Scandinavian pulp to be purchased 25 per cent. cheaper in Japan than formerly. The Chinese boycott of Japanese goods has been extended to the pulp and paper field, with the result that there has been a congestion in the Japanese market and a general decline in demand. However, the boycott has not been without its beneficial effect on the news print market in British Columbia, and orders for Pacific Coast news print picked up immediately after the outbreak of Japanese-Chinese trouble, with the result that several substantial Chinese orders had to be filled on this side of the Pacific.

News Print Parley in Embryo State

Negotiations with regard to the news print merger have really just begun, according to Toronto news print interests, and it will be considerable time before even any idea of possible terms is available. Interests here are optimistic with regard to the ultimate outcome, however, because, it is stated, all interests concerned in the negotiations favor a consolidation in principle. Many matters pertaining to the deal have still to be threshed out. Presumably each of the companies figuring in the negotiations will have to complete a compendium showing value, costs and potential earning power. These statements as prepared by each of the companies will have to be checked over and differences in detail ironed out. The capitalization of the various companies in relation to assets and potential earning power will require a good deal of discussion, as there still remain many problems in regard to the capital set-up of the different operators to be solved. No doubt is entertained by Ontario parties interested that the proposed merger will be a constructive one. It is safe to assume that all parties will do their best to see the consolidation through.

ECONOMIES OBSCURED BY DOLLARS

HOW much does it cost you to run without equipment you think you cannot afford to buy? In many cases the cost is sufficient to equal the purchase price of the equipment in a few months' time. You have machines, men to run them and power to drive them, but economical production of paper or board is achieved only when all operating wastes are eliminated. If the installation of Downingtown Suction Rolls on your fourdriniers or Downingtown Extractor Rolls on your cylinder machines, would improve production or operation, can you afford to permit their moderate initial cost to delay the installation? Every day of operation without them would mean that part of their purchase price would be wasted, just as though you daily destroyed part of your output. Delay may be costing you money, therefore why not investigate these rolls immediately. On request we will gladly call on you or mail descriptive literature and actual performance facts showing the savings obtained by mills making various grades of stock. The Downingtown Manufacturing Company, Downingtown, Penna.

DOWNINGTOWN

Demand for Paper Below Normal In Chicago

Holiday Season Request for Standard Grades of Paper Proves Disappointing—Book and Cover Paper Mills Operating From Four to Five Days Weekly—Kraft Paper Situation Continues Unsatisfactory—Board Market Practically Unchanged

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, November 28, 1931—The Thanksgiving holiday cut one business day out of the past week but, despite this reasonable excuse, dealers, jobbers and manufacturers representatives reported a noticeable slackening up in what activity had been going ahead. Demand for paper used in connection with the holiday season is far from ordinary and this, plus the well known tendency of the paper business to slacken a month or so prior to inventory taking, has caused a slowing up.

Practically all grades of paper are reported as "from slightly off to drastically off." Statements from representatives of the kraft market offer no rays of hope and the "buyers market" seems to continue in ruthless fashion. Writings are reported rather dull. Book and cover paper representatives report mills working at from four to five days, with one or two, however, having enough business at the time to operate about six full days a week. As stated above, papers aligned with the holiday trade have not noticed the seasonal spurt due, perhaps, to warm weather. The present cold snap, which was ushered in early in the week, may change the complexion of things by next week, to some degree, at least.

The board market continues unchanged over last week. News print prices, orders and inquiries are reported as "nervous," pending contract developments and because of the slackening of demand due to falling off of newspaper and periodical advertising lineage. Ground woods continue dull in sympathy with the news market. Waste papers are inactive.

Chicago Paper Association Elects Officers

The entire membership of the Chicago Paper Association was represented at the annual banquet and election of officers of that organization held in a special dining room of the Bismarck Hotel on the evening of November 24. From the standpoint of attendance, at least, the meeting set some kind of a new record for the coarse paper jobbers in the Chicago territory. At the same time, with Jim Danehy handling the major and minor details with marked success, the speaking program provided a rare treat for those present. The speakers were Anton J. Cermak, Mayor of Chicago, and Alderman Barnett Hodes, one of the aldermen who swept into office in protest of the Thompson regime. Greeter George Gaw, head of the Gaw-O'Hara Envelope Company and, accordingly, at least in a business relative to the paper industry, was also on hand and gave an interesting discussion of his job of greeting celebrities arriving in Chicago.

Mayor Cermak outlined the splendid opportunities offered by Chicago as a home and a place in which to do business. The chief executive of the city also traced the development of the city-wide campaign against crime and noted some important and substantial results. While decrying present conditions, brought on by an orgy of public spending, the Mayor presented a fairly optimistic picture for the benefit of his audience. Leo S. Altholz, chairman of the board of the Chicago Paper Association, and an executive of the Inlander-Steindler Paper Company, ably presided during the program.

Officers elected for the coming year include the following: Chairman of the Board, D. F. Peck, Hanchett Paper Company; President, W. E. Beier, Beier & Co.; first vice president, Walter Schulman, Levin Bros. Paper Company; second vice president, William Gaul, Gaul-Ingalls; secretary-treasurer, James S. Danehy, Schwarz Paper Company, and William Chukerman and Henry Thoms, members of the executive board.

News of the Trade

The Sabin Robbins Paper Company of Cincinnati, Ohio, with branches in several cities, has purchased the two story and basement concrete warehouse at 2717 South Troy street, Chicago, which it has occupied for the last year for a reported $130,000. The building contains 35,000 square feet of floor space.

Basic Fables Number 7 of the interesting series on this subject, being sent out to describe Hollingsworth Basic Bond, through Dwight Brothers and the Whitaker Paper Company, Chicago distributors, describes the fable of the "stubborn goat and the silly goat herd", and features the old saying that "facts speak plainer than words". Describing the twelve colors of Hollingsworth Basic Bond, the folder also illustrates some actual letter-head uses and makes good use of striking illustrations to insure reader attention and interest.

"As Correct as the Grey Toppers at Ascot", is the title of the current series describing Correct Bond, made by the Aetna Paper Company and distributed in Chicago through Midland Paper Company, Moser Paper Company, and Parker, Thomas & Tucker Paper Company. The illustration depicts a scene at Ascot and the copy features the real money value in being correct in letter-head papers, a "modern correctness, in fact, presupposing a rag content paper such as Correct Bond".

The West Virginia Pulp and Paper Company, from its Chicago offices at 35 East Wacker Drive, has mailed out its price list on stock sizes and weights in standard mill grades, effective November 15. Prices and descriptions are quoted on twenty-one various items.

E. R. McIntyre, formerly of the sales and service staff of the Kimberly-Clark Corporation, of Neenah, Wisconsin, is now associated with the Standard Process Corporation, of Chicago, serving in the capacity of sales manager.

Gatineau Co. Plans New Development

A great increase in the power development of the Gatineau Power Company, a subsidiary of the International Paper Company, is foreshadowed by the fact that the Quebec Government has authorized the lease of the Ottawa River between Temiskaming Dam and Allumette Lake for 75 years to that company. The lease is subject to authorization by the federal government, which controls navigation. Although the Ottawa is not navigable throughout its whole length as far as Lake Temiskaming, because of intervening rapids and falls, there has been a project before previous governments and Parliament itself, to make it navigable for ocean-going vessels from Montreal to the Georgian Bay.

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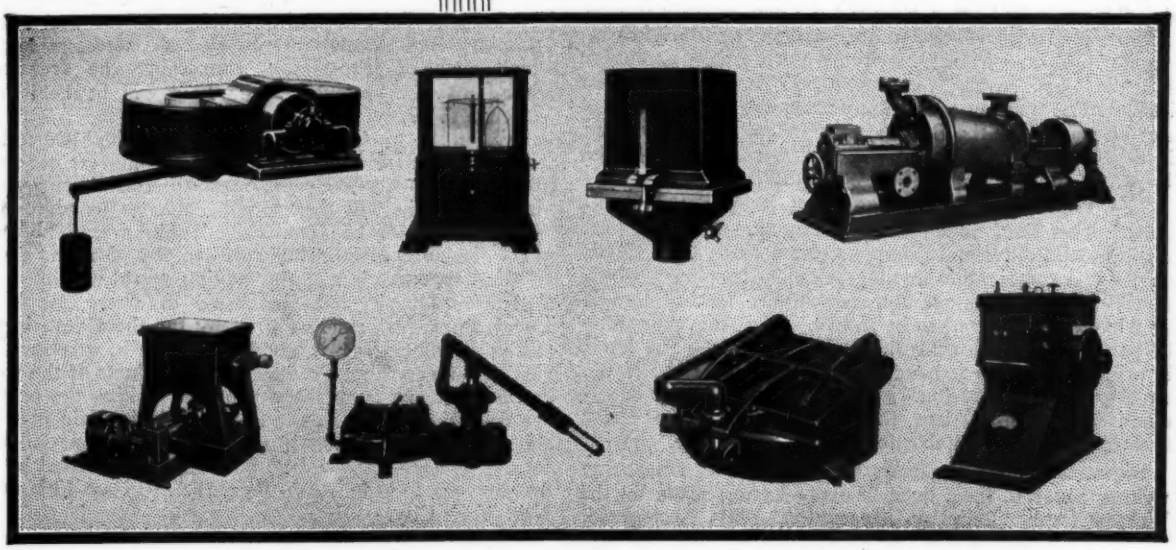
Today's easiest profits are being earned by *new* things outside the influences of keen competition. And the only way these new things can be uncovered and commercialized is through research and experimentation.

No mill can afford to wait and follow the courses blazed by other mills. Every mill must solve its own problems and carry on its own consistent program of self-improvement. Progress in the paper industry demands scientific control and creative development.

Talk to your chief chemist. Ask him if he has all the equipment he needs. If he hasn't, get it for him. It will prove one of the most profitable investments you ever made.

Write for our special Bulletin on Laboratory Equipment, addressing the Valley Iron Works Co., Appleton, Wisconsin.



Boston Paper Market Moderately Busy

Ledger and Bond Paper Moving Into Consumption At Average Pace for Season — Wrapping Paper Manufacturers Are Fairly Active, Despite Uncertainty In Kraft Price Situation— New England Box Board Conditions Are Gradually Improving

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 30, 1931—In the aggregate, paper wholesalers have transacted a moderate amount of business during the week, although it is stated that the holiday has affected the volume of orders. There are plenty of inquiries, indicating that consumers have not large supplies on hand and that the market is generally in a sound condition. With a few exceptions, prices are steady. Some of the recent inquiries have developed into actual orders. Average amounts of ledger and bond paper have been moving. Printers are showing a somewhat increased interest, with more activity in direct mail advertising. Wrapping paper distributors have consumated a fair number of sales, although the uncertainty of the price situation in kraft is causing some concern. The comparatively favorable movement in paper specialties and paper board specialties continues. Reports from road salesmen indicate that box board conditions in New England as a whole have improved to some extent. With some of the local handlers of box board, business has been quiet, generally, although clay-coated board continues to be in greater demand.

In most grades of paper stock, consumers have been holding prices fairly steady at recent levels, but dealers regard values as rather low. The market continues generally lethargic, although the feeling prevails that any substantial demand would have a favorable effect on prices. Few commodities have changed in value during the week. In old papers, however, No. 1 soft white shavings have been marked down from 1.90 @ 2.10 to 1.75 @ 2.00; No. 1 mixed shavings from .90 @ 1.00 to .75 @ .85, and No. 2 mixed shavings from .60 @ .65 to .50 @ .55. Values in bagging and all grades of rags are unquotably changed.

News of the Trade

What is announced as "innovation in wholesale paper merchandising" is a "pre-inventory accumulation sale of odd lots and discontinued lines" held Tuesday to Thursday this week by Carter, Rice & Co. Corp. at their Boston office. The stock offered at this bargain sale consists of standard grades of bonds, writings, covers, ledgers, books, Bristols, cardboards, announcements, and many other items. The mailing piece announcing the sale, which is sent to printers in the Boston metropolitan area, is printed in red display type on bogus lining, with "3 Red Letter Days" on the address page of the folder.

The Arnold-Roberts Company have been appointed exclusive New England agents for a new line, the Advelope, made by the Advelope Company, New York City. This device is a combination mailing-piece and envelope, which carries both the message and enclosure, a catalog, sample or whatever is desired to be shown. The Adevelope may be partly sealed, allowing third class postage. The letter is printed on the left hand "page." On the right is the envelope. The Advelope is not a made-up line, but is manufactured in 55 sizes, the customer selecting the size and material most suitable for the job to be done.

Storrs & Bement Company have just added a new fine writing paper to their lines, Worthy Letter, made by the Worthy Paper Company Association, West Springfield, Mass. This paper is made in both plain edges and deckle four sides.

The Parker-Young Company has sent out an attractive folder containing a swatch and envelopes illustrating the five colors in which they can now furnish their well-known Profile Manila. The folder is white Thornton Vellum, Sub. 32; the outside envelope natural Profile Manila, Sub. 40.

Spencer J. Blake, Eastern representative of the Badger Paper Mills, Peshtigo, Wis., spent two days in New England last week, in connection with establishing sales agencies for Ta-Non-Ka in this territory.

The November "How," published by the Tileston & Hollingsworth Company, and edited by A. V. Howland, contains timely and interesting messages to printers, characterized by their usual verve. The publication is printed on crinoline text, laid antique, ivory, with crinoline cover, café.

Charles S. Esty, managing director of Carter, Rice & Co. Corp., is receiving messages of sympathy on the death of his father, Frederick M. Esty, of Framingham, Mass., former register of probate of Middlesex County. Mr. Esty was appointed register of probate in 1916 and served until 1924, when he resigned because of ill health. He was assistant register from 1905 to 1916.

Free Trips to Leipzig Fair

Free trips to the Leipzig Trade Fair are offered to American business men in all parts of the country. Since thousands of American buyers and exhibitors are in the habit of visiting the famous Fair, the total cost of the trips will doubtless reach an impressive figure. The unique plan of stimulating American trade is taken as evidence of Germany's unbounded confidence in the future, despite the present financial uncertainty. The expenses of the trip from the United States to Leipzig and return will be refunded on the basis of orders placed at the Fair, and refund will be made in cash at Leipzig during the Fair. The Leipzig Fair maintains nineteen offices and official representatives throughout the United States, at any of which, detailed information concerning the free trips abroad may be obtained. The Fair will be held from March 6 to 12.

Even in this period of business unrest, the historic Fair will display some nine thousand of the newest industrial products of twenty-five countries. American business men visiting Leipzig will therefore be able as usual to shop among thousands of competitive exhibitors. The enormous display consists wholly of samples, forming an invaluable cross-section of the leading world markets. No similar opportunity is to be found anywhere else in the world, since the Leipzig Fair is by far the oldest, largest and most comprehensive goods exchange in existence. A visiting buyer can thus see the latest products of the world markets for one-tenth the expense of visiting the producing countries themselves, and the Leipzig Fair now enables him to meet even this expense. Information concerning the free trips to the Fair may be obtained by addressing the Leipzig Trade Fair, Inc., 10 East 40th street, New York City.

WHEN YOU BUY THIS EDGE-PROTECTED BELT YOU'RE SAVING LOSS FROM SLIP AND FRAY

ONE way to beat production costs is better belting.

With the new belting scientifically developed by Goodyear in recent years you can save those costs of slip, fray, and ply-separation which mount up cruelly fast.

The new Goodyear THOR Belt, seamless*, for instance, is completely covered by a heavy fabric envelope which is *part of the ply structure of the belt.*

This ingenious construction means protection from two of the toughest enemies which attack belting on heavy drives—edge-fray and seam failure.

Because there is no central seam in the envelope of the Goodyear THOR Belt there is no place in the center of the belt to open up under flexing strains.

Because the edges are covered by the envelope, fray may not creep in from the sides to cause ply-separation and other structural weaknesses.

You can save money on all your machinery with this new design Goodyear Belting. The G. T. M.—Goodyear Technical Man—expertly specifies it to each of your drives. Just write to Goodyear, Akron, Ohio, or Los Angeles, California, and ask him to call.

** Goodyear THOR Belting, seamless, is made in widths up to and including 16"—THOR quality of special construction is available for larger sizes*

THE GREATEST NAME IN RUBBER

GOODYEAR

TRANSMISSION BELTING

Need For Institute of Paper Chemistry in Development of The Paper Industry

By Maxamilian A. Krimmel[1]

Upon an occasion such as this it seems appropriate to analyze the pulp and paper industry to determine whether the establishment of an Institute of Paper Chemistry is justified. However, I am not going to present a detailed analysis of the industry because the need for an institute of this sort can be shown by considering only development and growth.

A study of the history of papermaking in the United States reveals the fact that the development of this industry was for many years retarded by the scarcity and lack of fibrous raw materials.

Since it is conceded that paper is a vital necessity in civilization and in the conduct of modern business, it can be said that the development of modern business and civilization was hindered by the same elements that affected the growth of the industry; and whatever contributed to advancement can be considered of great importance.

It is interesting to note that the two principal things responsible for the early developments were technical achievements—one in engineering, and the other in chemistry. I am referring to the invention of the Fourdrinier machine and to the application of chemical processes to a wide range of abundant fibrous raw materials. Today, even though there is a part of this industry (hand making of paper) governed by art rather than by science, the paper industry is a technical industry and the development up to the present time has been due largely to the efforts of technical men.

The principal task of the engineer and chemist during the earlier years was to provide means for producing sufficient quantities of paper to meet the demand at a price within the reach of a constantly increasing population. Naturally under such circumstances quantity was the prime factor, but with the expansion of the industry and the entering of competition, quality and cost became of paramount importance. Today with the demand for paper apparently more than satisfied and competition of the keenest kind, the problems of improving quality, reducing costs, and finding new uses are more urgent than ever.

Considering the pulp and paper industry as a whole, it is an extensive technical industry involving all phases of engineering, chemistry, chemical engineering, and physics. Think of the chemistry in the pulping, acid, bleach, size making processes, in water purification, waste utilization and by-products; the engineering in equipment, power, heat, construction, materials handling, waste disposal; the physics in papermaking and paper testing. For the efficient development of such an industry technical men have always been needed and are needed now.

Looking back upon technical developments in the industry since the two previously mentioned which might be called primary developments, we find nothing that can be compared with them in importance if we exclude industries from pulp such as rayon and cellophane. What we principally find are refinements, better understanding of processes, and application of engineering and chemical principals which are reflected in quality, cost, and new uses to the credit of the technical men in the industry.

Some Technical Problems

However, the facts that papermaking by machine is still largely an art, that rosin sizing is generally not understood, that so little is known about our basic raw material—cellulose and about the complicated reactions in the chemical cooking processes, that fifty per cent of the raw material of the sulphite process is still largely wasted, that much can still be learned about the structure of paper, that the principles of colloid and physical chemistry have not been applied to any great extent, that only slight use has been made of new research tools such as x-rays and micro analysis, that further development may depend on new uses for pulp and paper, and that many of the qualities of pulp and paper cannot be measured and exressed numerically in a satisfactory manner, are challenges to the present and future technical men of the industry. These are some of the problems which must be overcome in the further development of the industry.

For the development of our industry we need more men to do work of the type now being done at the Forest Products Laboratory, more men in the industry to apply the results of such work. Think of the value of it to the industry and of the possibilities in connection with a better understanding of the constitution of cellulose, of the formation and construction of fiber, and of the structure of paper. Think of what is being done at Forest Products Laboratory to convert papermaking into a science by controlling variables. In order to grasp the full significance of it one must consider cellulose as a basic raw material. Fundamental research on cellulose will enable us to use it properly and intelligently in our industry of today and tomorrow and to expand its use into new industries.

Technical contributions to the development of the industry in the past, the excellent progress being made in research and control, the technical character of the industry, and the unsolved problems of particular significance to the future development, not only justify what has been done, but also emphasize the importance of such work and show the need for highly trained men.

Excellent progress has been made by some of our associations working jointly in training men in the industry. Engineers and chemists from the universities and colleges, after becoming acquainted with the industry, have accomplished a great deal. Men from the undergraduate courses in pulp and papermaking at the New York State College of Forestry at Syracuse and at the Universities of Maine and Wisconsin, have taken a prominent role in the technical development of the industry. But it has been realized for some time, especially by the technical men familiar with the problems of the industry, that there was a need for a graduate school where the fundamentals of pulp and papermaking could be taught without sacrificing the chemical and engineering foundations so essential in the development of highly trained technicians and research workers.

It was, no doubt, due to Mr. Ernst Mahler's appreciation

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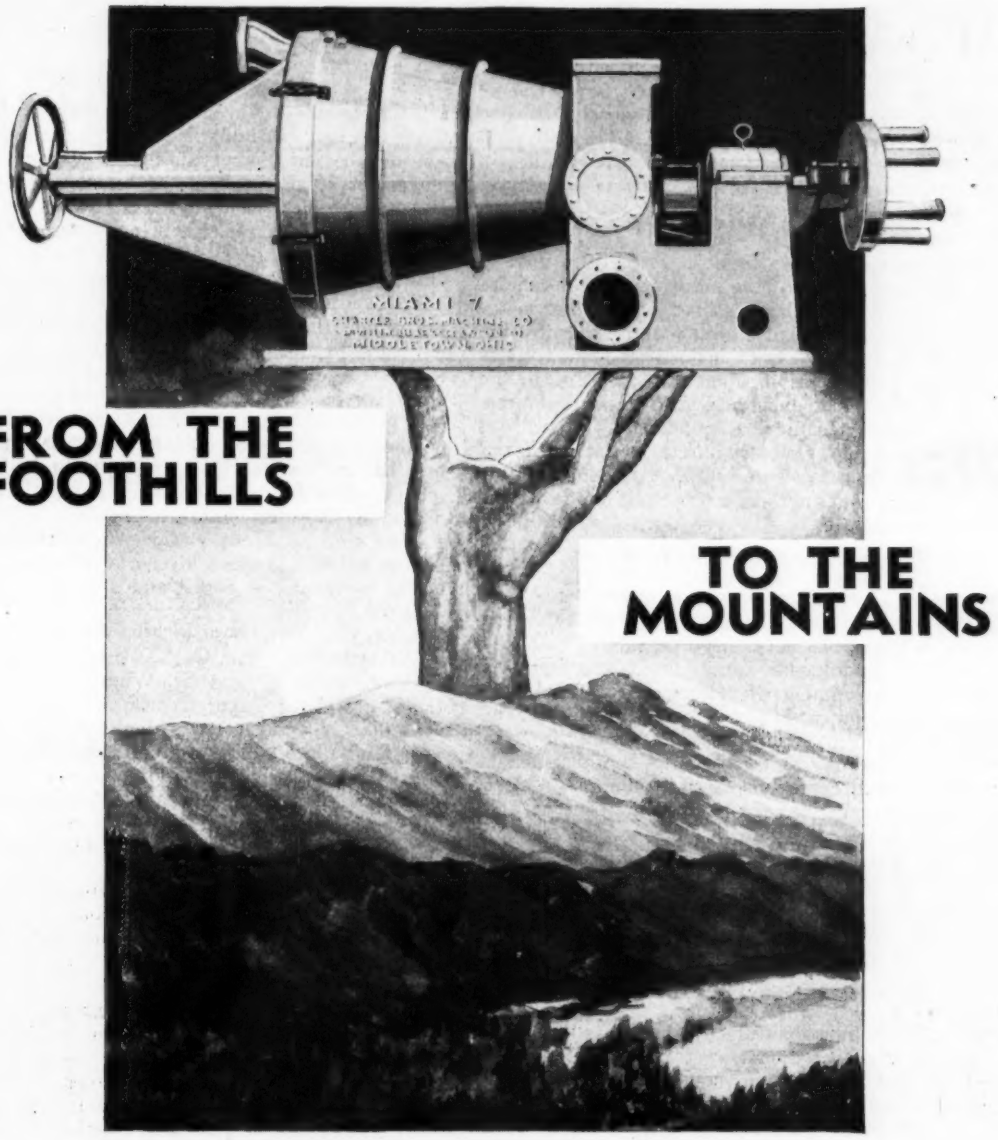
* Presented at the luncheon in connection with the dedication of the building for the Institute of Paper Chemistry at Lawrence College, Appleton, Wisconsin, Sept. 23, 1931.

[1] President, Technical Association of the Pulp and Paper Industry.



Not so many years ago Shartle Brothers were "small potatoes" among jordan builders. Today there are far more Miami jordans being sold, and that has been true for more than five years, than jordans of any other make. Verily from the foothills to the mountains.

No matter what the size of your mill or the type of product you make, there is a jordan at Shartles that exactly fits your job—that will save power — save on upkeep — do a better job of jordaning.

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SHARTLE BROTHERS

of the Institute of Paper Chemistry at the Technische Hochschule at Darmstadt, Germany, and his recognition and understanding of the requirements of our industry that he conceived the idea of this Institute of Paper Chemistry. The financial and whole-hearted support which has been given by the mills, especially those of Wisconsin, puts the stamp of approval upon it and shows that the idea is sound and that there is a need for the Institute.

Chief Function of the Institute

The chief function of this Institute is to train men to effect the full development of the industry through fundamental and applied research and through scientific methods. This requires technical training and concentration on technical methods. However, it does not seem entirely out of order to call attention, upon this occasion, to the necessity of giving some consideration to business depressions which hinder technical developments as well as progress generally and seriously affect so many of our activities. While this may be an unpopular subject, I am sure you will agree that anything that can be done to avoid depressions or moderate them is very much worthwhile.

Economic Considerations

Many reasons for the present depression have been given, but so far as I know the lack of technical development in any industry has never been mentioned as a possible cause. On the other hand, the opinion has been ventured that overdevelopment of science and technology is responsible. Development of almost any kind is usually accompanied by changed conditions. Therefore, it seems unfair to blame anything that contributes to advancement. Rather those who are responsible for administration of business should be criticized for not keeping pace with developments and being able to adjust business to economic changes. The present deplorable condition of business demonstrates the effect of changed conditions and unpreparedness, and emphasizes the necessity for giving more consideration to economics in every sense of the word.

Make for Stability in the Industry

I believe that technically trained economists, or, if you please Institute of Paper Chemistry trained men, taught to give consideration to economics could accomplish a great deal toward establishing stability in our industry and in reaching an economic balance. I fully realize that no single industry can stabilize a nation or world wide economic upheaval, but if our industry can set an example by being well balanced economically, I am sure the effect will be noticeable and it will reflect great credit upon us. Therefore, I am going to have the temerity to hereby recommend to the officers and trustees of the Institute and of Lawrence College that economics be given a place in the curriculum, or at least, that the economic side of technical developments be stressed upon every opportunity.

Since pulp and paper making constitute a technical industry, it is fitting that the Technical Association of the Industry should be represented on this occasion of the dedication of the building for the Institute of Paper Chemistry. That the Technical Association realizes the necessity for an institution of this sort for the development of the industry is shown by the support which it has given. On behalf of the members of TAPPI, I extend congratulations and best wishes and say that we have faith in the Institute of Paper Chemistry, that it will supply a necessary element of the industry and that it will prove to be a vital factor in the development of it.

Obituary

Walter S. Barnes, Sr.

BOSTON, Mass., November 28, 1931.—Walter S. Barnes, Sr., prominent Boston paper box manufacturer and the last member of Somerville's first city government, died November 19 in the home of his son, Walter S. Barnes, Jr., of 109 West Central street, Natick, who is sporting editor of the Boston Globe. He also leaves two other sons, Dr. H. A. Barnes of Dedham, and Frank Barnes of Newton, and a daughter, Miss Florence Barnes of Brookline.

Mr. Barnes was born in Enosburg, Vt., ninety-three years ago, the son of Clark and Sally (Corse) Barnes. He came to Boston in 1855 and from 1861 to 1868 was with George Dickerman, paper box manufacturer, on Green street. In 1868 he established himself in the paper box making business, with his factory on Water street, on the present site of the National Shawmut Bank. The firm has had an unbroken existence since then.

He was a resident of Somerville until 1896, when he moved to Boston. Later he moved to Brookline. Mr. Barnes married Melissa Aldrich of Middlesex, Vt. She died in 1913. He was a lover of outdoor life and a former active sportsman in forest and stream.

James Dickson Mallard

WILMINGTON, N. C., November 28, 1931.—James Dickson Mallard, aged 69, Wilmington representative of the Consolidated Paper and Box Company, of Richmond, Va., died November 19, at James Walker Hospital, after a month's illness. He was born at Wallace, N. C.

He is survived by his wife, Mrs. Lena Mallard, two daughters, Dorothy Mallard of Wilmington and Mrs. H. H. Dinsmore of New York City; one son, James L. Mallard of Wilmington, and one granddaughter, Jeanne Dinsmore of New York City.

Mr. Mallard, who had been covering Wilmington and the surrounding vicinity for the concern he represented for many years, was widely known and liked. He was a member of St. Andrews Presbyterian Church.

James A. Hedgcock

James A Hedgcock, chief engineer of the Management Engineering and Development Company died suddenly of heat trouble on Saturday morning, November 21, 1931, at his home, 800 Five Oaks Avenue, Dayton, Ohio.

Mr. Hedgcock was born in Frankfort, Indiana, November 21, 1882. He studied mechanical engineering at Purdue University and from 1904-1916 worked for several industrial engineers. From 1916-1919 he was engineer of the Sault Ste. Marie mill of the Spanish River Pulp and Paper Mills Ltd.

Since 1919 Mr. Hedgcock has been employed by the Management Engineering and Development Company in connection with the design and construction of pulp and paper mills.

Edward E. Howard

Edward E. Howard, fifty-six years old, superintendent of the Orono Pulp and Paper Company's mill in the Basin Mills section, and a former superintendent of the paper mills at Hughesville, N. J., died November 23, at his home in Orono, Me. Mr. Howard is survived by his wife and eight sons and daughters—Leslie, of Riegelsville; Lee, of Richwood, W. Va.; Elston, of Phillipsburg; John, Herbert, Gladys and Elberta, at home; and Mrs. Leo Green, of Orono, Me. While at Hughesville, Mr. Howard was a member of the Lutheran Church at Riegelsville.

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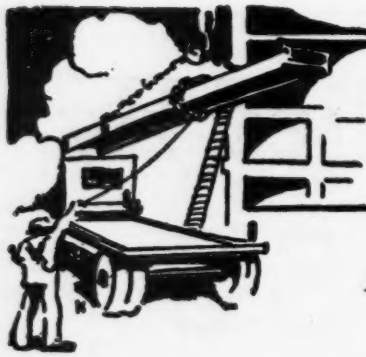


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Marion, Ind.—The Osborne Paper Company, 1012 South Adams street, has approved plans for alterations and improvements in its two-story and basement plant, and work will be placed under way at once. General contract has been let to C. W. Barley, 324 North Branson street, Marion. Estimated cost has not been announced. Burt French, Iroquois Building, Marion, is architect.

Otsego, Mich.—The Allied Paper Mills Company, Kalamazoo, Mich, has recently resumed production at its No. 1 Mill, Bardeen Division, at Otsego, following curtailment through the summer and early fall. The plant has sufficient orders on hand to continue operations through the winter period.

New York, N. Y.—The Berlin & Jones Envelope Company, 547 West 27th street, has leased space in the Starrett-Lehigh Building, 26th street and 11th Avenue, and will occupy for expansion in different departments.

Kaukauna, Wis.—The Thilmany Pulp and Paper Company is pushing construction on two new additions to its local mill, consisting of a one-story extension in machine department, 43 x 280 feet, and one-story addition to storage and distributing plant, 80 x 216 feet, and has awarded a number of miscellaneous contracts for steel, cement, roofing, etc. General contract is being carried out by the Permanent Construction Company, 735 North Water street, Milwaukee, Wis.; structural steel will be furnished by the Worden-Allen Company, Milwaukee; roofing contract has been let to the Federal American Cement Tile Company, Chicago. Estimated cost of project has not been announced. M. A. Wertheimer is president.

North Wilbraham, Mass.—The Collins Manufacturing Company, Holyoke, Mass., has work under way on extensions and improvements in power plant at paper mill in the North Wilbraham district, for which general contract recently was let to the Casper Ranger Construction Company, 6 Newton street, Holyoke. It is expected to have the unit ready for increased service at an early date. An award for roofing and sheet metal work has been made to the E. H. Friedrich Company, 73 Sargent street, Holyoke. McClintock & Craig, 458 Bridge street, Springfield, Mass.

Lowell, Mass.—A. F. French & Co., 165 Market street, Lowell, manufacturer of paper boxes and containers, has acquired the local Musketaquid mill of the United States Worsted Company, including building and land, as well as water rights on the Concord River. The structure totals close to 45,000 square feet of floor space, and it is understood will be occupied by the purchasing company for expansion.

Port Angeles, Wash.—The Olympic Forest Products Company, Port Angeles, has work under way on an expansion and improvement program in pulp storage department, for which contract recently was let to Gustav Jarvie, 925 14th street, Seattle, Wash. The work is estimated to cost close to $25,000, and will be pushed through to early completion.

Ontonagon, Mich.—The Ontonagon Fibre Corporation has been organized with a capital of 10,000 shares of stock, no par value, to take over and expand the Ontonagon Fibre Company, operating a local mill for the production of kraft paper stock, paper board, etc. James E. Frost, Escanaba, Mich., is one of the incorporators. It is understood that present officers of the company will continue with the new organization.

Plattsburg, N. Y.—The Norstrand Manufacturing Corporation is running on a capacity basis at its wood pulp mill, giving employment to a full working force. The plant is on a three-shift basis in 24-hour period, and will hold to that rating for an indefinite time.

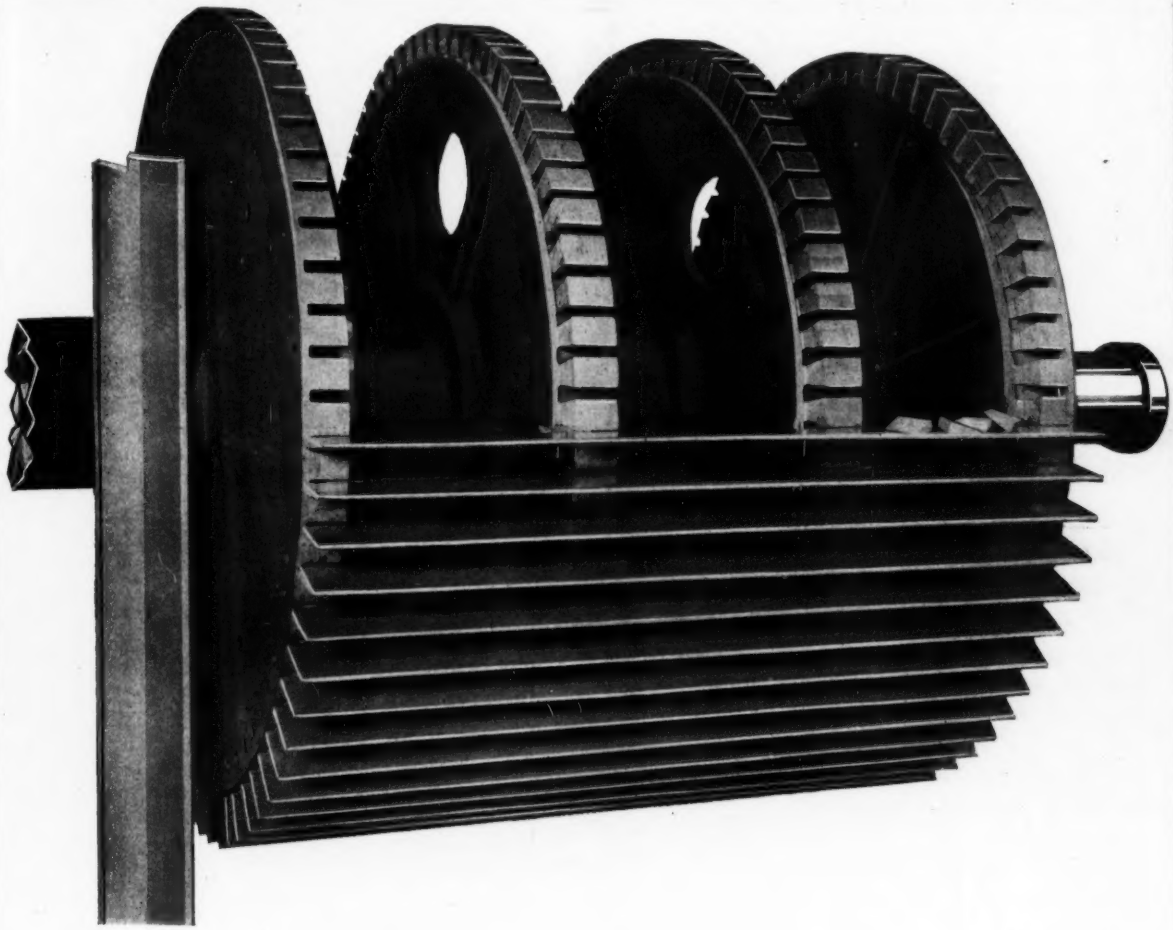
Niagara Falls, N. Y.—The Defiance Paper Company, affiliated with the Niagara Wall Paper Company, T. M. Uptegraff, president of both organizations, is running on a capacity schedule, with incoming orders insuring continuance for some weeks to come. The working force at the plant was recently increased. The Niagara Wall Paper Company, likewise, is holding to a full production basis, and has also added to its working force with a number of men in different departments. The shipments from the last noted plant in October were the largest in any month for the past ten years.

Buffalo, N. Y.—The Iroquois Bag Company, Inc., 463-67 Howard street, manufacturer of paper bags, has filed plans for a small one-story addition to be used for storage and distributing service. Estimated cost has not been announced.

Sturgis, Mich.—The Harvey Paper Products Company, Sturgis, is said to be planning the construction of a new addition to its plant for general increase in operations. The unit, it is understood, will be one-story size.

Buffalo, N. Y.—The M. H. Birge & Sons Company, manufacturer of wall paper, is running on an improved production schedule, giving employment to about 200 men, and will hold to that basis for an indefinite period. Since last summer approximately 50 men have been added to the working force. Present capacity is between 80 and 85 per cent of maximum. David T. Dunbar is treasurer.

Longview, Wash.—The Weyerhaeuser Timber Company, Longview has completed the construction of a new pulp mill, representing an investment said to be in excess of 2,500,000, and will place the plant in com-



ONE THOUSAND

Dilts Patented Bandless Rolls have passed the thousand mark and are used on almost every class of paper. All steel heads, no loose bars, no rings, no bands, no weak points, no bad features, refilled right in the beater, the best and strongest roll built. We can rebuild your old rolls to the Dilts Patented Bandless type. Your new beaters should be equipped with Dilts Patented Bandless Rolls.

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mercial service at once. The unit has been in course of construction for a number of months past. It will utilize wood waste from the local saw mills of the company and will develop large capacity.

Eureka, Cal.—The plant of the Humboldt Paper Company, Eureka, comprising storage and distributing departments, was recently damaged by fire. An official estimate of loss has not been announced, but is reported close to $20,000. The company is said to be planning early rebuilding.

Stockton, Cal.—Fire recently damaged a portion of the local plant of the Fibreboard Products, Inc. An official estimate of loss has not been announced, but it is reported as slight. The damage will be replaced.

Norman Chip Duster

NORMAN CHIP DUSTER
Patent Applied For

The illustration presented herewith represents the Norman Chip duster, patent applied for, manufactured by Fibre Making Processes Inc., Chicago.

The chips are fed into the chamber from the air sealed feeder at the top. Entering the chamber the chips meet a blast of air and are forced against the screen running the length of the chamber in about the center. Cinders and other impurities are blown through the screen into the dust compartment and through the outlet at the bottom. The clean chips are removed from the chip compartment through an air sealed feeder at the bottom. The chips keep the screen clean. The capacity of one of these units 2½ feet wide is about 3000 cubic feet of chips per hour and the approximate power for running the machine is 5 hp.

Leading Regulator Companies Unite

BOSTON, Mass., December 1, 1931.—According to an official announcement just made public, the Mason Regulator Company has acquired the Neilan Company, Ltd., Los Angeles. Terms of the transaction were not divulged, but the deal is believed to be one of the most important ever made in the regulator business. F. Kenneth Morrison, widely known in his capacity as sales manager of the Mason Regulator Company, states that "through the joining of the Mason and Neilan companies we are now able to offer a broader and more useful service to every industry interested in efficient control of process and power. The addition of the Neilan line makes possible a number of interesting and valuable contributions to the increasingly important development of scientific control throughout industry. The combined laboratory and production facilities and the force of experienced field engineers now available at every industrial center throughout the United States puts us in a position to increase greatly the scope and helpfulness of our service in this industrial operation."

Pre-Toned Wall Board Corp. Expands

WHITEHALL, N. Y., November 23, 1931.—The Pre-Toned Wall Board Corporation has filed notice with the Secretary of State of an increase in its capital stock from $125,000 to $240,000. Incorporation articles were filed in the spring of last year authorizing the firm to manufacture and deal generally in wallboard, plasterboard of all kinds and other building material and supplies. The principal stockholders are Donald B. Wheeler and Karl R. Karlson, of Hudson Falls; John L. Nolan, of Whitehall; Julian B. Donohue, of Albany, and Robert I. Vincent, of Glens Falls. Donald Wheeler is also serving as consulting engineer for the new firm and Edward R. Waite as attorney.

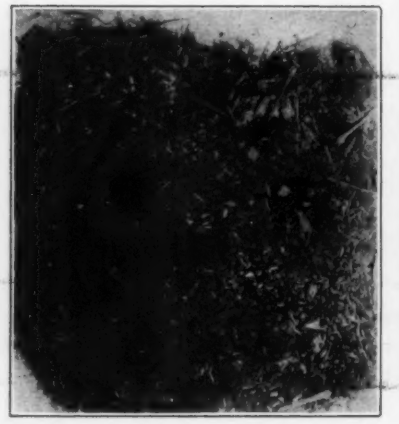


FIG. A

FIG. B

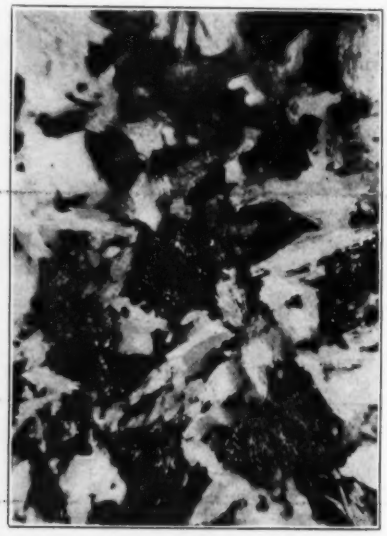
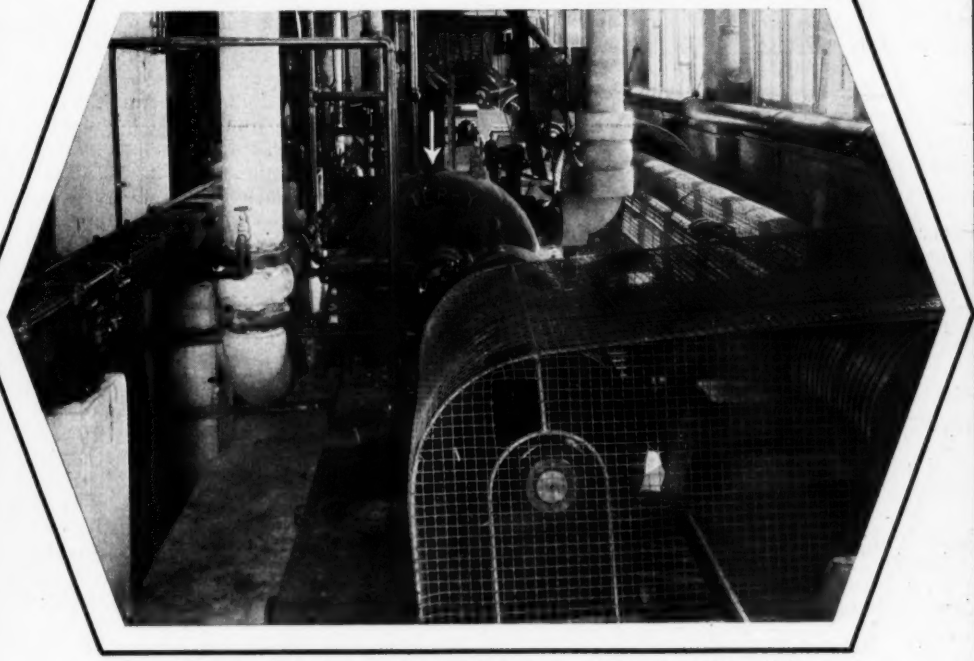


FIG. C

Impurities extracted by Norman Chip Duster from chips previously screened by vibrating screens. A—General appearance, half size.. B and C—Enlarged views. Light pieces are wood; black pieces are bark, cinders and some iron particles.

TERRY



250 H.P. Terry driving new 202 in. Beloit paper machine at St. Helens Pulp & Paper Co. mill, St. Helens, Oregon.

New Flexibility
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The Terry Turbine Paper Machine Drive can be furnished to operate over any speed range up to 10 to 1.

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T-1092

New York Trade Jottings

J. T. Gartland, sales manager of the Northwest Paper Company of Cloquet, Minn., was a New York visitor last week.

* * *

Allied Paper Mills, Inc., are now installed in their new sales offices at 447-448, 230 Park Avenue, New York. The new telephone number is Murray Hill 2-5332.

* * *

John H. Engelke is now associated with the mill supply department of the Walker-Goulard-Plehn Company, Inc., of 450 Pearl street, New York.

* * *

The Joint Committee on Approved Pulp Testing Chemists, with headquarters at 370 Lexington Avenue, New York, announces that the F. W. Liepsner Laboratory is to be continued to be recognized as approved commercial chemists.

* * *

Japan Paper Company, of 109 East 31st street, New York, has just issued an interesting booklet printed on Hayle English hand-made paper, entitled "St. Martin, or the Blessings of Rags," a description of the way of making paper by hand, as set forth for British Customs Officers in 1713.

* * *

Summerfield Eney, Jr., sales promotion manager of the Champion Paper Company, 230 Park Avenue, New York, addressed the class in Printing Office Practice at New York University last week, illustrating his talk by an exhibit of gravure, offset and letter-press work.

* * *

J. M. Carmody, publishing director and editor of *Factory and Industrial Management*, talked on November 16 before the New York Chapter of the National Association of Cost Accountants on "What American Industry Can Learn From Management Methods In Russia." Excerpts from this address are available direct from F. C. Eibell, Worthington Pump and Machinery Corporation, Harrison, N. J.

* * *

Henry Stafford, of the Babson Statistical Organization, discussed commodity prices and the general business situation at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry last Tuesday, at George's Restaurant, New York. Mr. Stafford stated that his organization was optimistic over the outlook for 1932 and that it looked forward definitely to a period of general business improvement. He pointed out the tremendous potential replacement purchasing demand and predicted that the volume of trade would be larger and the range of commodity prices higher in the forthcoming year. Mr. Stafford reviewed some of the fundamentals, and illustrated his remarks by a chart showing the physical volume of business conducted in the United States from 1900 to-date. He also displayed other charts showing commodity prices from 1790 to-date. Mr. Stafford's address proved very interesting and instructive and was thoroughly enjoyed and appreciated by all present.

Frank M. Stephens Resigns

KALAMAZOO, Mich., December 1, 1931.—Frank M. Stephens, for the past two and one-half years vice-president, sales manager and director of the Bryant Paper Company, Kalamazoo, Mich., has resigned, effective as of December 15.

P. H. Glatfelter Co. Issues Pamphlet

An interesting pamphlet has been sent the rounds of the Philadelphia paper trade by the P. H. Glatfelter Company, Spring Grove, Pa., which was compiled by Charles H. Barr, and given as his speech before the distributors of Monoplane Bond, at Spring Grove, during the annual meeting on October 6. It is a dissertation on paper men's woes, beginning with the mill men and taking them through the distributive channels down to the sales forces with application of remedial suggestions that might tide the industry over it difficulties in the field of "Waterloo" and lead on to a "Geneva" where mill men and paper distributors may arbitrate and come to better understanding as friends instead of combatants. The article is entitled, "Wither The Paper Business—Geneva or Waterloo".

He gives in the following terms the business slant of the mill: 1—The mill thinks that the merchant is planning to operate on a mill-shipment basis without being satisfied with broker's margin. 2—The mill thinks that the higher the merchant's mark-up, the more dangerous his position. 3—The mill thinks that sales management is under-emphasized in the merchant's set-up. 4—The mill thinks that the big buyers of paper have other reasons than price for wanting to deal directly with the mill. 5—The mill believes that mark-up has become an obsession with the merchant, obscuring salesmanship and perspective. 6—The mill thinks that the merchant lets his salesmen run his business. 7—The mill thinks that its own cost of distributing is becoming prohibitive.

Then he gives some of the woes of the paper merchant in the following vein: 1—The merchant thinks that some of the smaller mills, as a contribution to the industry, should close down and quit. 2—The merchant thinks there is too much paper being made. 3—He thinks there are too many lines in existence. 4—He thinks the mills ought to police the merchants—after allowing them the mark-up they demand, to compel them to charge it. 5—He thinks that the mills run amuck—snatching at one another's grades and lines, every mill making everything. 6—He thinks that the mill expects the merchants to sell more paper than is bought.

These, he states, are some of the "old saws" and "bugaboos" of the trade and after dissection tells how he has learned by investigation that many of the complaints are groundless and should be dispelled in order to conduct business in a profitable way.

J. T. Gamble To Be General Manager

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., December 1, 1931—Announcement is made of the promotion of John T. Gamble to the position as general manager of all operations at the plants of the Union Bag and Paper Corporation in this village. Since entering the employ of the firm a few years ago he has acted as superintendent and his choice to fill the newly created post was pleasing to his many friends. The position as general manager has been vacant since the resignation of George S. Witham about two years ago, no attempt being made to appoint a successor. In his new position Mr. Gamble will have general supervision of all manufacturing activities, it is understood.

Representatives of the company appeared this week before the village authorities and requested that a large reduction be made on the assessed valuation of the mill properties here. A revision was allowed on Mill No. 5 and it is expected that the valuation of other units will be lowered in view of existing conditions.

TECHNICAL BOOKS

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The PAPER *and* PULP INDUSTRIES

CHEMISTRY *of the* SULPHITE PROCESS

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M. W. Bray, R. Soderquist, T. M. Andrews,
W. H. Mansson

The papers which constitute this book appeared originally in the trade and technological journals as current reports of the progress of investigations under way at the United States Forest Products Laboratory for a period of about six years beginning with 1921. This information is the accumulation of years of experience. The method by which sulphite with the desired properties is to be made, the conditions under which it must be cooked, the strength of acid to be used, the equipment, operation and materials are all fully covered in this book. Included in this volume also is "Sulphite Pulp from Spruce" by Donald E. Cable.

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PAPER MAKING MATERIALS

by Clarence J. West

In this edition, the literature has not only been brought up to date, but many additions have been made to the earlier work.
The paper making materials have been listed in dictionary style under the common and botanical names, the references being given only under the latter.
Books and articles are listed under the author (or title) in the dictionary arrangement, and to refer under each material, to the author, and the year of publication.
This list includes all the woods tested at the Forest Products Laboratory, as well as many tested by the Imperial Institute of Great Britain and by other workers.

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THE LITTLE OLD PAPER MACHINE

The numerous letters that reach the desk of the editor of the PAPER TRADE JOURNAL are, as might be expected, usually prosaic in character. Occasionally, however, a communication comes from an old-time subscriber which reveals that years ago he formed the habit of reading the Journal from seeing the copies that came regularly to father, or uncle and perhaps grandfather. These letters always awaken pleasant memories. They are always most welcome.

One such came the other day. The editor is printing it at the suggestion of Mr. Ralph Snell, widely known in the paper industry, who has spent years collecting data having to do with the history of the paper industry in America and who, as a labor of love, will undertake soon the work of putting this material into the printed word so that it may be preserved and made easily available to future generations. The editor is sure that this letter, which follows, will bring an interesting picture to the minds of many old-timers and that because of that reason it is certainly worth printing.

Benton Harbor, Mich., November 7, 1931.

Editor PAPER TRADE JOURNAL:

Many, many years ago, perhaps more than a half century, when the writer was a mere lad and struggled hard to read his father's copy of the PAPER TRADE JOURNAL, there was at the heading of the Journal the picture of a complete Fourdrinier paper machine, from "Knocker Screen" to old "Stop Cutter," of that period.

I used to love that little old paper machine, and the PAPER TRADE JOURNAL always in later years seemed short of some element, and now I know what it is—it's the "little old paper machine." In after years I worked as back-tender on a paper machine of similar design.

My father was one James F. Marshall, master paper maker; it was he who gave the world its first level surface sheet of paper. He was the brother of Geo. E. Marshall of Driving Train fame.

I sometimes feel the cosmic urge to write a simple non-technical work on the story of paper that the unsophisticated might learn about the paper of every day of which the literature is meagre and uninteresting. But how can I write of such things unless I have the inspiration of the "little old paper machine?"

Please: is there such a thing as obtaining a copy of the picture of this paper machine mentioned above?

Yours very truly,
GEO. H. MARSHALL, Chemist.

How the paper industry has changed since the days of the "little old paper machine!" The picture of the machine on the front page of the Journal probably represented machines that were operated not much in excess of one hundred feet per minute. This picture was first printed in 1872.

Regarding the speed of paper machines, Carl Hoffman in his "Treatise on the Manufacture of Paper," published in 1873, said: "If every part is constructed with the utmost care, substantially and true, a machine with a wire 33 feet in length and seven drying cylinders of 3 feet diameter, can make news print paper at a speed of from 100 to 130 feet per minute. The width of the machines has also been increased until wires 86 inches wide are now quite numerous and some of 90 inches and even 100 inches are in use."

Fourdriniers are now commonly running at one thousand feet per minute, some are running at 1250 feet per minute and paper has been made at greater speed even than this. Some Fourdriniers now exceed 300 feet in width. But fundamentally the process of making paper has continued practically unchanged. The marvelous developments in mechanism since the days of the "little old paper machine" have been principally along the lines of increasing the speed.

Issues of the PAPER TRADE JOURNAL needed to supply this request have, of course, been out of print long ago, but of course we devised ways and means to send Mr. Marshall his picture of the "little old paper machine."

BRITISH IMPORT DUTIES

Commercial Attache William L. Cooper at London reports that the British "Abnormal Importations Bill" signed on November 20, conferring emergency powers on the Board of Trade for a period of six months to impose import duties on certain goods, was followed immediately by the Issuance of Order-In-Council No. 1, imposing import duties of 50 per cent ad valorem in addition to any existing duties, effective November 25. The report states that among other articles affected were packing and wrap-

ping paper, including vegetable parchment, glazed, transparent, and grease proof papers.

While the Scandinavian countries, Finland, Germany, and the Netherlands, are the leading sources of supply for these papers, and consequently will be most affected by this order, the United States nevertheless exported 361,352 pounds of grease proof and water proof papers, and 3,775,917 pounds of other classes of wrapping paper to the United Kingdom last year with a combined value of $307,476.

Bids and Awards for Government Paper

WASHINGTON, D. C., December 2, 1931—The Mathers-Lamm Paper Company has been awarded the contract for furnishing the Government Printing Office with 61,200 pounds of No. 2 binders board at 3.05 cents per pound. The Lindemeyr Paper Company will furnish 4,000 pounds of No. 1 gummed kraft paper at 6.8 cents per pound. Bids for these items were received on November 6.

Postals, Ltd., Hants, England, was awarded the contract for furnishing 21,920 sheets of hand made paper at $1,213.36 bids for which were received on October 21.

The Government Printing Office has received the following bids for 40,000 pounds of binders boards; R. P. Andrews Paper Company, $1,800; Barton, Duer & Koch Paper Company, $1,800; Consolidated Paper Company, $1,200; and Mathers-Lamm Paper Company, $1,220.

The following bids were also received for 5,000 sheets of 22 x 28 inches gray photo mount board; Dobler & Mudge, at $51.90 per M; Reese & Reese, $48.95; Barton, Duer & Koch Paper Company, $47.95; Charles G. Stott & Co., $52.00; The Whitaker Paper Company, $50.56 and $50.00; Old Dominion Paper Company, $51.99; Lindemeyr Paper Company, $52.00; Virginia Paper Company, Inc., $80.00; and R. P. Andrews Paper Company, $54.50.

The Government Printing Office has also received the following bids for 7,388 pounds of white recording instrument chart paper; R. P. Andrews Paper Company, at 18.3 cents per pound; Whitaker Paper Company, 17.5 cents; Barton, Duer & Koch Paper Company, 19.6 cents; Reese & Reese, 17.84 cents; Hawthorne Paper Company, 20.73 cents; Whiting Paper Company, 20 cents; Mathers-Lamm Paper Company, 24 cents; Virginia Paper Company, 31 cents; and Old Dominion Paper Company, 24.74 cents.

The following bids were also received for 1,000 pounds of red stereotype molding paper; Cauthorne Paper Company, 11 cents per pound; R. P. Andrews Paper Company, 11.25 cents; Whitaker Paper Company, 11.3 cents; Barton, Duer & Koch Paper Company, 10.5 cents; Old Dominion Paper Company, 11.7 cents; Stanford Paper Company, 11 cents; Reese & Reese Inc., 11.5 cents; and Mathers-Lamm Paper Company, 12 cents.

G. H. Pountain Leaves Bryant Paper Co.

KALAMAZOO, Mich., December 1, 1931—George H. Pountain, for a long period of years secretary of the Michigan Division of the American Pulp and Paper Mill Superintendents Association, and one of the best known paper makers in Michigan, has resigned as superintendent of the Bryant Paper Company. He has no immediate plans for the future. Mr. Pountain has in turn held responsible positions locally with the old Monarch Paper Company, Allied Paper Mills and the Bryant Paper Company.

TAPPI Notes

S. C. Brayton, formerly superintendent of the ground wood mill of the Blandin Paper Company, Grand Rapids, Minn., is now with the Northwest Paper Company, Cloquet, Minn.

Sidney D. Wells is now with the Combined Locks Paper Company, Appleton, Wis. Mr. Wells was recently with the Nekoosa-Edwards Paper Company, prior to which he was technical advisor to the straw board industry.

G. S. Brazeau, representative of the pulp division of the Weyerhaeuser Timber Company, has been transferred from Longview, Wash., to 307 North Michigan Avenue, Chicago, Ill.

P. D. Switzer has resigned his position at the Moore & White Company, Philadelphia, Pennsylvania, and is at present located at 6 Burt street, Bellows Falls, Vt. Mr. Switzer has made no definite plans.

H. K. Berger who until recently was a member of the technical staff of Fraser Companies, Ltd., Edmundston, N. B., is now a chemist at the Camas, Wash., mill of the Crown Willamette Paper Company.

M. R. Bhagwat, formerly research chemist of the Oxford Paper Company, is at present unemployed and may be reached at 812 Elm Avenue, Ridgefield, N. J.

R. V. Holland, of the Union Gas and Electric Company, Cincinnati, Ohio, read a paper entitled, "Operating Experiences and Characteristics of Canadian News Print Mills," at the meeting of the Miami Division of the Superintendents Association at Franklin, Ohio, on November 21.

We recently announced that E. K. Mansfield has become associated with the Androscoggin Pulp Company as vice-president. Mr. Mansfield is also board mill production manager of the Robert Gair Company.

The tentative standard method for sulphate recovery room practice relating specifically to suggested definitions of standard terms which was recently submitted to the members of the Technical Association for vote, was approved and is now an official method of the association.

By a similar vote the tentative method for measurement, sampling and analysis of white water has been approved as an official method.

Making Packing Cases at Longview

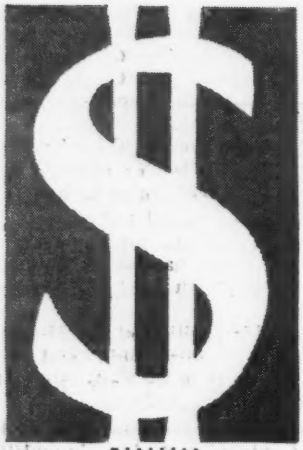
[FROM OUR REGULAR CORRESPONDENT]

LONGVIEW, WASH., November 14, 1931.—The Longview Fiber Company, which began a few months ago to manufacture its own fiber packing cases and containers from its mill products instead of sending the material away for fabrication, is enjoying a good business. The company announces that 70 per cent of the finished products are now disposed of to consumers on the Pacific coast. Another market which has developed is the Hawaiian pineapple shipper. At this time much of the cargo of Hawaiian pineapple which arrives in west coast ports is packed in containers made in Longview.

To Be Editor of Papier-Zeitung

Dr. A. St. Klein, who is well known in the paper industry of America as well as in other important pulp and paper centers of the world, has been made editor-in-chief of *Papier-Zeitung* and *Zellstoff und Papier*, Berlin, Germany, succeeding Editor Ferenzci, who has conducted these papers for a long number of years past.

Dr. Klein has many friends in the pulp and paper industry of this country and Canada who will wish him success in his new work and hope that under his editorship the *Papier-Zeitung* and *Zellstoff und Papier* will achieve additional prosperity and prestige.



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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Patents and the Employer and Employee

There are two very important questions that often arise between employer and employee in regard to inventions developed during the period of employment. The first is who is the actual inventor. For, unless the actual inventor signs the oath of the application, there can be no valid patent. The second is what are the respective rights of the parties in the resulting patent. For, the employee may honestly feel that he should be handsomely rewarded for having made the invention possible and the employer may be just as sincere in believing that he is entitled to the ownership of the patent because of the employer-employee relationship.

The rules for ascertaining the actual inventor have been set forth in a previous bulletin. They may be briefly summarized as follows:—The one who originates the inventive concept and the general plan is the actual inventor, even if another works out its details or makes valuable discoveries so long as they are merely ancillary to the general plan. Likewise, if one is merely given a problem in general terms or finds it necessary to depart radically from the preconceived plan or design in developing the invention, he is the actual inventor. However, if one conceives the inventive idea and the other makes suggestions which modify and make the main idea operative or contributes an independent part of the entire invention which combines with the part produced by the other to create the whole, both are considered joint inventors.

In the absence of specific contact provisions, the ownership of a patent is vested in the actual inventor and generally speaking no one else has any right therein. Hence, an employee, performing all the duties assigned to him in his department of service, may exercise his inventive faculties in any direction he chooses, with the assurance that whatever invention he may thus conceive and perfect is his individual property. The general rule is, however, subject to certain limitations. If one is employed to devise or perfect an instrument, or a means for accomplishing a prescribed result, he cannot after successfully accomplishing the work for which he was employed, plead title thereto as against his employer. That which he was employed and paid to accomplish becomes, when accomplished, the property of his employer. Then again, when one is in the employ of another in a certain line of work, and devises an improved method or device for doing that work, and uses the property of his employer and the services of other employees to develop and put his invention into practicable form and allows his employer to use the invention in his business without objection or demand for extra compensation, the employer usually acquires what is known as a shop-right.

A shop-right gives the employer the right to use the invention in his business without the payment of royalty for the life of the patent. In the case of a machine, the license extends only to the specific machines set up during the period of employment. In the case of a process, the employer has ordinarily the right to carry out the process without limit. Where the invention is a simple device and the employer has made and sold several with the employee's acquiescence, the employee cannot later prevent further sales.

A shop-right is personal to the employer and hence cannot be assigned except with the employee's permission. Sale of the business, however, carries with it all shop-rights. A shop-right does not give its owner the right to sue infringers and hence the employer has no way to prevent competition in the new thing, except by agreement with the employee. For the employee still retains title to the patent and only the owner of the patent can bring suit thereon.

In order to avoid complications, many firms require all their employees to agree to assign to the employer all inventions made during the period of employment and pertaining to the employer's business. Such agreements are binding whether written or oral. However, oral agreements are difficult to prove and it is therefore advisable to require a written agreement.

A written agreement usually lessens the employee's incentive to exercise his inventive ingenuity, especially when he is not specifically hired to invent. Hence, some firms have incorporated into the agreement a promise of extra compensation for worthwhile inventions.

NOTE: This is the twelfth in a series of educational bulletins issued by the Patents Committee of the Technical Association of the Pulp and Paper Industry. Comments and inquiries should be sent to the Chairman, C. W. Rivise, Arch Street, Philadelphia. Pa.

New TAPPI Members

Lloyd L. Dodge, secretary of the Rapinwax Paper Company, St. Paul, Minn., is also in charge of the production and research departments of that company. Prior to joining the Rapinwax organization in 1924 Mr. Dodge had his own business of manufacturing rubber and automotive specialties.

Louis A. Dolan, research chemist for the Nekoosa Edwards Paper Company, Port Edwards, Wis., attended Beloit College and the University of Wisconsin, following which he was chemist respectively for the Southern Extract Company, Knoxville, Tenn., the Kalamazoo Vegetable Parchment Company and the Deerfield Glassine Company, Monroe Bridge, Mass.

Stanley R. Keith, metallurgical engineer of the A. P. Smith Manufacturing Company (alloys) East Orange, N. J., graduated from Lehigh University in 1913. Since then he has been metallurgical engineer for Taylor Wharton Iron and Steel Company, Bethlehem Steel Company, Ordnance Department of U. S. Army, Doehler Die Casting Company, Hardits Metals Inc. and Giley Wire Company.

Loss In Yield and Quality Of Pulp In Digesters Which Were Not Blown Clean*

By Otto Kress,[1] Karl E. Buff[2] and Harry J. Irwin[3]

Due to the fact that digesters do not always blow clean, any pulp remaining in the digester is recooked unless the quantity of pulp is so large that a reblow is made by adding black liquor in alkaline pulping or water in sulphite cooking and again blowing the digester after it has been raised to pressure. If the amount of pulp left in the digester is small in quantity, many mills do not reblow in order to conserve time and also keep the digesters in step for steaming, also thereby avoiding drawing too heavily on the steam plant. It has been stated that this recooking has little effect on the strength and quality of the pulp. The following experimental work was carried out to determine what happened to the yield and physical and chemical constants of the pulp when it was subjected to various cooking conditions.

It was realized that the cooking conditions in the experimental autoclaves used do not duplicate actual mill conditions. However, the results obtained give a valuable indication of what actually takes place.

The experimental autoclaves used were cylindrical in shape, approximately 7 inches by 9½ inches inside dimensions, holding about 5.5 liters. In the cover were placed a thermometer well, a pressure gauge and a blow-off valve. The thermometer well, made of the same material as the autoclave, was 3/16 inch in diameter and 5 inches in depth; the pressure gauge used was connected to the cover by ½ inch pipe; the blow-off valve was connected with a ½ inch pipe. The cover was bolted on by 8⅝ inch bolts. A soft lead gasket was used to insure a tight fit. The autoclave was supported on three 8 inch legs and was heated directly by a Bunsen flame.

Three lined autoclaves were used; one was lined with an 18 per cent chrome-8 per cent nickel material and was heat treated, while the second autoclave was lined with the same material but was given no heat treatment after fabrication; the third was lined with a high chrome-iron material and was also heat treated.

The pulps used for cooking were unbleached spruce sulphite, unbleached jack pine kraft, and bleached soda pulps. Weighed, air dried quantities of these pulps, the moisture contents of which were known, were cooked with liquors similar to those used in the making of the pulp, under conditions of concentration, temperature, and pressure which approached actual mill operating conditions. The contents of the digesters were gradually brought to their maximum temperature by direct heating with a Bunsen burner. In cooking sulphite pulp, excess fictitious gas pressure was prevented from accumulating by relieving while heating; in the kraft and soda cooks the pressure was made to correspond through relief of air and gases to the pressure corresponding to the actual temperature. The average cooking time was 5 hours, at the end of which time the pressure was relieved to 40 pounds and the digesters were allowed to cool over night. They were then opened, contents dumped on a 60 mesh screen, a sample of the waste liquor was saved for further analysis; the pulp was thoroughly washed and air dried, its oven dry weight calculated and the physical and chemical constants were determined. From the difference between the original and final oven dry weight of the pulp the percentage loss in yield, if any, was calculated. In addition to cooking with the ordinary strong liquors, cooks were made using the same experimental conditions but various cooking liquors, such as sulphite and kraft waste liquors, 10 per cent by volume of strong liquor in water, and tap water were used. In addition to these cooks, extended cooks with strong liquors were made on the kraft and soda pulps.

Experimental Methods Employed

1. Cooks Made With Strong Cooking Liquor

A known quantity of sulphite pulp was treated with ordinary bisulphite cooking liquor which contained about 6 per cent total, 5 per cent free, and 1 per cent combined SO_2. A maximum temperature of 155 deg. C. was attained within an hour and a half. The gauge pressure, while bringing the digester up to temperature, was prevented from greatly exceeding the pressure corresponding to the temperature by relieving the autoclave according to standard practice. Throughout the cook an excess of from 5 to 10 pounds of fictitious gas pressure was maintained constantly by relieving when necessary, the actual gauge pressure being between 70 to 75 pounds. At the end of the cooking period (5 hours) the pressure was gradually relieved to 40 pounds and the digester was allowed to cool over night, whereupon it was dumped, a sample of the liquor saved for analysis, the pulp thoroughly washed with water, air dried, weighed, its moisture content determined, and the percentage loss in yield, if any, calculated. All the subsequent cooks were treated similarly at the end of their cooking periods.

Ordinarily, 250 grams of pulp to 4 liters of cooking liquor were used, but it was not always possible to maintain these proportions. It was also found necessary to duplicate most of the cooks in order to obtain sufficient pulp for the various physical and chemical tests.

The kraft pulp was cooked with a strong white liquor made up of approximately 100 grams of NaOH and 30 grams of Na_2S per liter. The cooking time was 5 hours, the maximum temperature 155 deg. C., and the pressure, 65 pounds, no fictitious pressure being carried.

In cooking the soda pulp a strong liquor containing 100 grams of NaOH per liter was used. The pressure and temperature were maintained as in the kraft cook given above.

2. Cooks Made With Waste Liquor

Sulphite pulp was cooked with waste sulphite liquor obtained from a local sulphite mill. The kraft and soda pulps were recooked with a kraft waste liquor from a local mill. The pulping procedure was followed as previously described.

3. Cooks Made With 10 Per Cent Strong Liquor

The sulphite, kraft and soda pulps were cooked according to the described procedure, using 10 per cent by volume of strong liquor to 90 per cent by volume of water.

4. Cooks Made With Water

The sulphite, kraft and soda pulp were cooked with water, using the pulping procedure as described.

5. Successive Cooking of Kraft and Soda Pulp With Strong Liquor

An extended 15 hour cook with a strong liquor was made. At

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* Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Kalamazoo, Mich., Sept. 24-26, 1931.

[1] Member TAPPI, technical director, The Institute of Paper Chemistry, Appleton, Wis.
[2] Junior member TAPPI, student, The Institute of Paper Chemistry.
[3] Student, The Institute of Paper Chemistry.

SULPHITE PULP AND RESIDUES.
Original Sulphite.

SULPHITE PULP AND RESIDUES.
Sulphite pulp cooked with waste liquor 5 hours.

SULPHITE PULP AND RESIDUES.
Sulphite pulp cooked with 10 per cent strong liquor 5 hours.

the end of 5 hours the digester was dumped, liquor samples saved, the pulp washed, a pulp sample saved, whereupon the remainder of the pulp was returned to the digester and cooked for another five hours with a proportionate amount of fresh strong liquor. At the end of this 5 hour cook the process was again repeated and the pulp cooked for another 5 hours. The cooking conditions mentioned above were followed.

A sample of soda pulp was cooked intermittently with strong liquor for 42 hours without opening the digester.

Table I give the weight of pulp, amount of liquor used, and the percentage loss in yield for the various cooks.

Analysis of Liquors

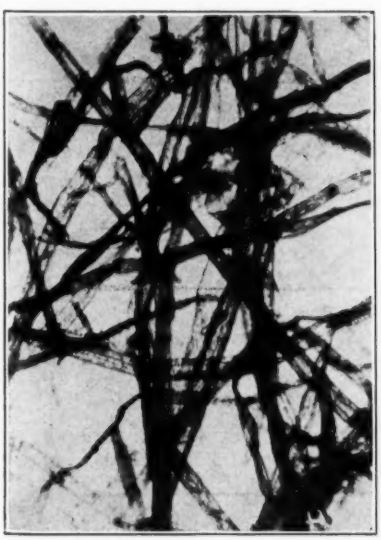
In analyzing the sulphite liquor the total SO_3 was determined by titrating with N/10 Iodine solution, the free SO_3 by titrating with N/10 NaOH, and the combined SO_2 by difference according to standard procedure.

In analyzing the kraft cooking liquor for NaOH a portion was treated with excess 10 per cent $BaCl_2$ solution and an aliquot portion was titrated with N/2 HCl to the phenol and M. O. end points according to standard mill procedure. The NaOH and the Na_2S were calculated to Na_2O in grams per liter. In the kraft waste liquor the free Na_2O was determined in the same way as it was in the cooking liquor. The total Na_2O was determined by evaporating and ashing a portion of the liquor, leaching out the soluble Na_2CO_3 with hot water and titrating with N/2 HCl to the M. O. end point. The percentage causticity was calculated by dividing the free Na_2O in the waste liquor by the total Na_2O and multiplying by 100.

The Na_2O in soda cooking and waste liquors was determined in the same manner as it was in the kraft liquors.

Table II gives the analytical data on these cooks.

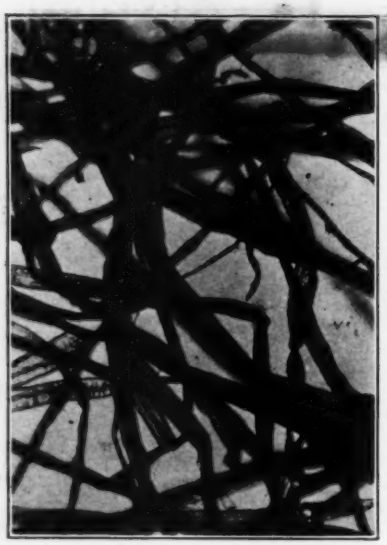
Alpha, beta and gamma celluloses were determined on the pulp



SULPHITE PULP AND RESIDUES.
Sulphite pulp cooked with water 5 hours.

SULPHITE PULP AND RESIDUES.
Sulphite pulp cooked with strong liquor 5 hours.

KRAFT PULP AND RESIDUES.
Original kraft pulp.



KRAFT PULP AND RESIDUES.

Kraft pulp cooked with waste liquor 5 hours.

KRAFT PULP AND RESIDUES.

Kraft pulp cooked with 10 per cent strong liquor 5 hours.

KRAFT PULP AND RESIDUES.

Kraft pulp cooked with water 5 hours.

residues left after cooking. The alpha cellulose was determined gravimetrically while the beta and gamma celluloses were volumetrically. The experimental procedure for these determinations was the method recommended by the Cellulose Division of the American Chemical Society.

The Schwalbe-Braidy method was used for determining the copper number of the residues. Technical Association Papers, May, 1931 (page 273).

The cuprammonium viscosities of the pulp residues were determined by the method developed by H. W. Bialkowsky. (Technical Association Papers, May, 1930, pages 195-200.)

Hand sheets were made of the pulp residues and strength tests were made with a Mullen bursting strength tester and are reported on the usual percentage basis.

The relative freeness of the pulp residues was determined by a Schopper-Riegler freeness tester.

The physical and chemical constants of the pulps are given in Table III.

Photomicrographs of the original pulp fibers and of the various fibers after cooking were taken to show the effects of the different cooking liquors on the pulps.

Results and Conclusion

In cooking the kraft pulp for fifteen hours with strong liquor, from 25 to 35 per cent of the original pulp was lost, after each five hour cooking period. At the end of this time the pulp remaining was in such a condition that it could be cooked no longer without resulting in complete disintegration. When this pulp was dried a very hard and brittle material was obtained which did not resemble the original pulp. The condition of the residue was such that no accurate cellulose determinations could be made. The photomicrographs made of the original pulp fibers and of the fibers cooked

KRAFT PULP AND RESIDUES.

Kraft pulp cooked with strong liquor 5 hours.

KRAFT PULP AND RESIDUES.

Kraft pulp cooked for 10 hours with strong liquor.

KRAFT PULP AND RESIDUES.

Kraft pulp cooked 15 hours with strong liquors.

SODA PULP AND RESIDUES.

Original soda pulp.

SODA PULP AND RESIDUES.

Soda pulp cooked with waste liquor 5 hours.

SODA PULP AND RESIDUES.

Soda pulp cooked with 10 per cent strong liquor 5 hours.

for various lengths of time well illustrate the progressive disintegration of the pulp fibers.

After the soda pulp had been cooked intermittently for 42 hours with one charge of strong liquor, the entire charge was filtered through a cloth filter. The weight of the material remaining on the filter was less than one tenth of the original. The residue, which formed a solid cake on drying, contained 36 per cent noncombustible material and in no way showed any resemblance to the original pulp. Therefore none of the physical or chemical constants could be determined.

It was found that when pulp was recooked with any of the cooking liquors mentioned above that there was a decided loss, in almost every case, in yield and that in general the loss increased with increase in strength of the cooking liquors.

In determining the cellulose contents of the various pulp residues, it was found that the per cent alpha cellulose in the sulphite residues decreased definitely with increase of cooking liquor strength, whereas in the alkaline cooks a slight percentage increase was noted. This is no doubt due to the fact that the acid cooks degrade the cellulose while the alkaline cooks tend to remove the impurities such as lignin and degraded celluloses, leaving the relatively more resistant alpha cellulose. The percentage beta and gamma celluloses of the sulphite pulp residues remained practically constant in spite of various degrees of cooking. Evidently the pulp was degraded beyond this stage. However, the beta and gamma celluloses of the alkaline pulp residues generally showed decided increase. No definite trend could be noticed.

The copper number of the sulphite pulp residues showed a definite increase over the original although the copper number of the kraft pulp residues was decreased as would be expected. That of the soda pulp varied somewhat. Again no general trends could be noted.

The accuracy of the beta, gamma, and copper number determinations is in doubt because the experimental method employed not

SODA PULP AND RESIDUES.

Soda pulp cooked with water 5 hours.

SODA PULP AND RESIDUES.

Soda pulp cooked with strong liquor 5 hours.

SODA PULP AND RESIDUES.

Soda pulp cooked for 42 hours with strong liquor.

only indicates the values for these determinations but also they are affected by any further degradation products of cellulose which possess reducing power, thereby giving fictitious figures.

The cuprammonium viscosities of the sulphite pulp residues dropped rapidly to a low figure, evidently reaching a minimum value in all cooks except that with tap water. The viscosities of the alkaline pulp residues decreased definitely, those of the kraft residues decreasing with increase in strength of the cooking liquor while the percentage decrease of the soda pulp was small because of the low original figure. These changes in cuprammonium viscosities are a decided indication of the degradation occasioned by the pulping treatments.

Strength tests made on the sulphite pulp residues were so low on all except that of the tap water cook that no accurate determinations could be made. The pulp was in such condition that it was difficult to make a hand sheet. The strength of the kraft pulp residues was also decreased but only that cooked with the strong liquor was extremely low. No strength tests were made on the soda pulp because of its low original strength.

The relative freeness of the various residues was practically the same as that of the original pulps. These results fall in line with the work done by Bialkowsky, which has shown that the freeness of a pulp depends upon its degree of hydration and only to a very minor degree upon the individual fiber length. The photomicrographs of the cooked pulps show that the pulp fibers were reduced decidedly in length but that practically no hydration had taken place.

In general recooking pulp with strong liquor tends to reduce its yield, strength and chemical constants. Under commercial conditions the pulp that remains in the digester and on which fresh wood and liquor is placed for the succeeding cook is subjected to the action of the hot liquor with consequent loss in yield, strength, and purity.

TABLE I
PULPING DATA AND YIELDS

Cooking liquor	Oven dry wt. of original (gms) pulp	Oven dry wt. cooked pulp	Per cent loss of pulp	Volume of liquor used (cc)
SULPHITE				
Strong liquor	471.7	340.5	27.8	7000
Waste liquor	471.25	446.1	5.34	8000
10% strong liquor	471.3	446.6	5.25	8000
Tap water	408.2	407.3	.22	7000
KRAFT				
Strong liquor	471.3	283.3	39.9	8000
Waste liquor	466.6	462.7	.84	8000
10% strong liquor	468.8	447.7	4.72	8000
Tap water	466.5	466.0	.1	8000
15 hour cook strong liquor				
(1st 5 hours)	235.7	155.	34.2	4000
(2nd 5 hours)	135.5	102.	23.6	3250
(3rd 5 hours)	80.0	51.	36.3	2250
SODA				
Strong liquor	333.3	166.3	50.1	4000
Kraft waste liquor	245.7	195.4	20.5	4000
10% strong liquor	245.7	202.0	17.8	4000
Tap water	245.7	239.0	2.73	4000
42 hour cook strong liquor	244.8	16.2	93.5	3250

TABLE II
ANALYSIS OF LIQUOR

Cooking liquor	Free SO_2	Combined SO_2	Total SO_2
SULPHITE			
Strong liquor	5.2	1.1	6.3
Waste liquor	...	...	0.11
10% strong liquor	0.52	0.11	0.63
Tap water	...	...	...

	Cooking liquor before each cook (in gms/liter)			Waste liquor from each cook (Na_2O in gms/liter)		
KRAFT	NaOH	Na_2S	Na_2O	Free	Total	% Causticity
Strong liquor	91.8	29.2	95.4	80.	91.7	87.3
Waste liquor	14.1	...	10.9	7.06	49.1	14.4
10% strong liquor	8.17	2.59	8.4	6.93	8.24	84.1
Tap water	...	...	...	...	...	...
15 hour cook strong liquor						
(1st 5 hours)	89.6	33.3	96.0	83.5	95.2	87.7
(2nd 5 hours)	91.2	31.1	95.5	80.0	85.1	94.0
(3rd 5 hours)	91.2	31.1	95.5	89.2	91.8	97.2
SODA	NaOH	Na_2CO_3	Na_2O	Free	Total	% Causticity
Strong liquor	103.6	1.13	81.0	62.0	74.0	83.8
Kraft waste l	14.1	...	10.9	6.18	48.8	12.66
10% strong l	10.4	2.64	8.27	.589	6.78	8.69
Tap water	...	...	...	...	...	...
42 hour cook strong liquor	103.6	1.13	81.0	53.9	75.4	71.5

TABLE III
PHYSICAL AND CHEMICAL CONSTANTS OF THE PULPS

Pulp from the following cooking liquors	Per cent Alpha cellulose	Per cent Beta cellulose	Per cent Gamma cellulose	Cuprammonium viscosity (centipoises)	Cu. no.	Per cent Mullen	Original freeness
SULPHITE							
Original	90.0	0.86	1.80	52.80	2.56	96.0	870
Strong liquor	83.6	0.66	1.35	6.12	4.34	(1)*	810
Waste liquor	86.00	1.05	1.35	8.13	3.58	3.0	875
10% strong liq.	84.60	0.14	1.35	8.88	2.74	3.0	855
Tap water	89.6	1.12	1.18	37.40	3.97	83.0	870
KRAFT							
Original	84.65	8.64	3.37	28.4	2.11	128.0	900
Strong liquor	88.45	21.01	5.39	3.56	0.524	1.5	885
Waste liquor	87.1	25.2	17.30	21.78	1.8	118.0	865
10% strong liq.	86.0	12.6	13.2	21.4	.735	120	870
Tap water	86.8	16.00	10.4	27.2	1.05	115	880
15 hour cook strong liquor—							
(1st 5 hours)	88.7	18.53	4.07	5.02	0.324	(1)*	(3)*
(2nd 5 hours)	84.0	18.96	3.14	3.06	0.324	(1)*	(3)*
(3rd 5 hours)	(2)*	(2)*	(2)*	2.7	0.721	(1)*	(3)*
SODA							
Original	80.48	10.83	7.21	12.38	0.456	(4)*	(4)*
Strong liquor	85.72	11.09	4.41	3.70	0.252	(4)*	(4)*
Kraft waste liq.	83.2	25.00	4.41	8.51	0.978	(4)*	(4)*
Tap water	82.67	11.19	4.41	8.75	1.260	(4)*	(4)*
42 hour cook strong liquor	(2)*	(2)*	(2)*	(2)*	(2)*	(4)*	(4)*

(1)* Hand sheets made from these pulps too weak for testing.
(2)* Pulp too degraded for chemical analysis.
(3)* Pulp too degraded for freeness determination.
(4)* Not tested for strength or freeness.

Preparation of Wholestuff

TECHNIK UND PRAXIS DER PAPIERFABRIKATION. Band I, Zweiter Teil Die Bereitungs des Papierganzstoffes. By Dr. Ing. Heilmuth Schwalbe, Technical Director, Dill & Collins Paper Co., Philadelphia, Pa. Otto Elsner Verlagsgesselschaft m. b. H., Berlin, 1931. 464 pages. 283 illustrations. Price, bound, 28 RM.

This volume is a part of the series on paper manufacture prepared under the editorship of Emil Heuser and Erich Opfermann. It covers the following topics: Recovery of old papers and wastes; construction of beaters; refining of pulps; sizing of papers; fillers; dyeing and dyestuffs.

The first chapter, p. 1-73, covers the various processes of sorting, disintegrating and digesting old papers; the kollergang, its construction and drives; various methods of defibering the products from the kollergang; the use of special beaters (hollanders); and various methods and processes for deinking waste papers.

Chapter two, p. 75-157, opens with a theoretical discussion of the beating process, and follows with a thorough discussion of the construction of the beater, beater systems and drives and various types of refiners.

Chapter three, p. 159-295, discusses the mode of action of the beater, the mechanical preparation of the halfstuff, beating methods and their control, regulation of the density of pulps, power consumption of the beater, properties of papers and the preparation of special papers.

Chapter four, p. 297-395, presents theoretical views on the nature of rosin, the preparation of rosin soaps and size, emulsions, dilution of the rosin size to beater concentration, the action of aluminum sulphate and of the various constituents of the paper, the fixation of the rosin on the fibers and the processes taking place on the paper machine; this theoretical discussion is followed by a practical consideration of the preparation of rosin soap and size, the question of aluminum sulphate and surface sizing.

Chapter five, p. 397-423, dealing with fillers, covers talc, asbestine, gypsum, barium sulphate and carbonates.

Chapter six, p. 425-453, considers the theoretical aspects of dyeing, the dyes used and the dyeing process.

The book contains over 1000 references in the form of footnotes, to standard works on papermaking and the various periodicals devoted to this subject.

Although the book is necessarily written from the standpoint of the German reader, it should have considerable value to those American workers who read German readily.

C. J. WEST.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For photostatic copies of articles appearing in the Abstract Section, address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B. Streets, Washington, D. C. The charge for this service is: Photostats 9 x 11 inches, 18 cents each; 18 x 11 inches, 35 cents each; 22 x 18 inches, 70 cents each; minimum charge, 50 cents. Payment should be made upon receipt of invoice. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Pulp and Paper Testing

Durability and Permanence of Modern Paper. James Strachan. Paper Maker & Brit. Paper Trade J. 80, No. 6: xiii-xiv (Dec. 1, 1930); 81, No. 1, xxxvii-xxxviii (Jan. 1); No. 2, lxi-lxiiii (Feb. 2, 1931).—A general discussion from the economic, practical, scientific and technical standpoints, bringing out the influence of the nature of the raw materials and of manufacturing processes on the durability and permanence of paper.—A. P.-C.

Fibrous Raw Materials Committee Report. Jesse E. Minor. Tech. Assoc. Papers Series 14: 293-294 (May, 1931); Paper Trade J. 93, No. 8: 47-48 (Aug. 20, 1931).—An outline of the scope of the work of development required for a proper understanding of paper permanence, and of the present status of the problem of permanence standards for the paper industry.—A. P.-C.

Application of the Photoelectric Cell to the Measurement of the Opacity of Paper. (Mrs.) C. Roy-Pochon. Papier 34; 749-750 (July, 1931).—A brief outline of the principle of the determination of the opacity of paper by means of the photoelectric cell, bringing out its advantages over the photometer.—A.P.-C.

Williams Freeness and Consistency Tester. A. Khokhryakov. Bumazhnaya Prom. 9, No. 10: 55-61 (Oct., 1930); Chimie & Industrie 25: 1487 (June, 1931).—A description of the construction, operation and merits of the latest type of Williams freeness tester. —A. P.-C.

Inspecting Apparatus for Meter Paper. James R. Weaver assignor to Westinghouse Electric and Manufacturing Co. U. S. pat. 1,790,183 (Jan. 27, 1931).—The purpose of the instrument is to test the accuracy of the spacing of perforations along the edges of strips of paper to be used in electric meters. A plunger is alternately raised and lowered to contact with an anvil. The connections and adjustment are such that, if the perforations are not properly spaced, the plunger, on striking the paper instead of the anvil, opens the circuit of the motor feeding the paper through the instrument, thus automatically stopping the motor.—A. P.-C.

Bursting Strength Tester. Alfred Schopper assignor to the firm Louis Schopper. U. S. pat. 1,797,734 (March 24, 1931).—In an instrument of the general type of the Mullen tester, interchangeable clamps of the same shape but of different sizes are provided so as to be able to vary the area subjected to pressure according to the nature of the sample being tested.—A. P.-C.

Quick Method for the Testing of the Resistance of Paper Toward its Destruction by Light. E. H. Riesenfeld and T. Hamburger. Papier-Fabr. 29, No. 11: 164-166 (March 15, 1931).—For measuring the stability of paper to light, several kinds of paper was subjected to the action of light under certain conditions. The determination of the injurious action of light in the decrease of tear in the paper is difficult to determine since a long time is required before this is materially manifested. But on the other hand, the change in fluorescence takes place in a relatively short time, and it is this factor which can be measured and is used. The various sources of artificial light, quartz lamp, etc., are described, with their particular advantages and disadvantages. The wire side and the top side must be investigated separately. The time of the test is from 10 to 18 seconds.—J. F. O.

Determination of Acids and Alkali in Paper. H. Schmidt, Wochbl Papierfabr, 69, No. 23A: 44 (June 6, 1931).—Potentiometer method used for the determination of acids and alkalies, with slight changes from that used in this country.—J. F. O.

Concerning the Optical Methods for the Determination of the Whiteness of Paper and Pulp. H. Wenzl, Tech. Chemie Papier Zellstoff Fabr. 28, No. 1: 1-5 (Feb. 28, 1931).—The author describes the construction and operation of the various apparatus for subjective photometry. 1. The half shadow photometer according to W. Ostwald for the measurement of bright, smooth and structureless surfaces. 2. The gradient photometer, according to Pulfrich with an additional gadget called "color multiplier" for the measurement of bright surface which is rough and of any structure. 3. The gradient photometer according to Pulfrich with a special device for the measurement of bright surfaces of any structure, also for a smooth surface. The use of the photometer gives a numerical expression of the whiteness of the material. Besides eliminating the errors of the naked eye with different observers, the sensitivity of the photometer is four to five times as great. Differences in the methods of manufacture, amount of filler, and the yellowing of the material during its drying, can be observed by the photometer. By means of numerous data, the sensitivity of the three methods is described.—J. F. O.

Machinery

Explosion of a Pulp Digester at Lancey and the Lessons to Be Learned Therefrom. E. Allar. Bull Assoc. Fr. Propr. App. Vap. 11: 233-268 (Oct., 1930); Chimie & Industrie 25: 1488-1489 (June, 1931).—A detailed description of the accident and of the investigation of its causes, with a discussion of the precautions to be taken to prevent recurrence of such happenings. The following should be observed in connection with the construction and starting up of new digesters: (1) Use a carefully tested mild steel; (2) in calculating the thickness of the shell, the limit of endurance to repeated strains and the tensions resulting from tensile and bending stresses should be taken into consideration; (3) repairs should always be carried out by riveting, never by welding; (4) the lining should be as thin as possible; (5) in starting up the digester, the temperature should be raised very slowly. (Translation of part of the report appeared in *Pulp Paper Mag. Can.* 31; 363-364, 392-393, 406-408, 418-420 (March 12-26, 1931).—A. P.-C.

Barometric Mercury Valve for Pressure Vessels Containing Corrosive Liquids. L. Cauchois. Bull. Assoc. Fr. Propr. App. Vap. 11: 269-274 (Oct., 1930); Chimie & Industrie 25: 1487 (June, 1931).—A description of a mercury barometric valve provided with electric light signals installed on the pulp digesters of the Grand-Quevilly mill of Papeteries Navarre. The maximum digester pressure is balanced by a column of mercury (200 kilos) in a U-tube; if the pressure rises above the desired maximum the mercury is forced into an overflow container connected to a centrifuge to avoid loss of mercury. A green light is automatically lit and a bell rung when the normal cooking pressure is reached. A danger signal (red light) is turned on when the pressure rises too high, and the pressure is automatically re-

duced. An example is given of a case in which the operation of the valve prevented a serious accident.—A. P.-C.

Direct-Connected Chipper Drive. S. P. Bordeau. Paper Industry 13: 752h (Sept., 1931).—Replacement of belt drives by direct-connected electric drives for two chippers at the Bucksport mill of the Maine Seaboard Paper Co. resulted in an increase of about 25% in the output of the chippers.—A. P.-C.

Driving Grinders by Means of Steam Turbines and Reducing Gears. R. Meunier. Papeterie; 814, 817 (July 10, 1931).—Brown Boveri Co. has developed a steam turbine unit for driving grinders through reducing gears which, when heating or process steam is required, is even more economical than driving with hydro-electrical power. Such a unit has been in satisfactory service for several years in a Saxony pulp and paper mill. When an excess of heating or process steam is available, a generator can be connected to the intermediate shaft of the reducing gear.—A. P.-C.

Economy of Wood and Steam Effected by the Mechanical Filling of Digesters and Utilization of Waste Heat. H. Koch. Papier 34; 855-859 (Aug., 1931).—A brief outline of the advantage of Fresk and Svenson chip fillers and of the Lurgi acid-making systems (including pyrites burners).—A. P.-C.

St. Helens Operating New Machine. Anon. Paper Industry 13; 752a (Sept., 1931).—A description of the chief features of the new 202-inch, 1400-ft. per min., lightweight-paper machine recently installed in the mill of the St. Helens Pulp and Paper Co., St. Helens, Ore.—A. P.-C.

Largest Fine-Paper Machine in Europe. Anon. Papeterie 53; 1009-1010 (Aug. 25, 1931).—A brief description of the principal features of a 200-inch 60-ton fine-paper machine, designed to run at 200 to 700 feet per minute, constructed by the Fullnerwerke company.—A. P.-C.

Some Observations on Couching, Couch Rolls and Jackets. W. C. Warrell. Paper Maker & Brit. Paper Trade J. 82, No. 1; v-vii (July 1, 1931).—A brief discussion of the function and care of couch-roll jackets.—A. P.-C.

Crowning of Couch and Press Rolls. Otto Jung. Industrie Papetiere 10: 315-319 (Aug., 1931).—A brief discussion of the importance of correct crowning and perfect mounting of couch and press rolls in order to get uniform action across the full width of the paper sheet.—A. P.-C.

Press Roll Doctor. Anon. Paper Mill 54, No. 33; 4 (Aug. 15, 1931); World's Paper Trade Rev. 96: 862 (Sept. 11, 1931).—A description of the Vickery hi-angle doctor and of its merits.—A. P.-C.

Measurement of Nip Width and Contact Area of Calender and Press Rolls. James Strachan. Paper Maker & Brit. Paper Trade J. 91, No. 5: cxxxvii-cxxxix (May 1); No. 6: clxi-clxii (June 1, 1931).—Methods are given for calculating the nip widths and contact areas of calendar rolls and of press rolls, and methods for determining them directly are described. The methods are practical, and examples are given showing close agreement between the calculated and determined values.—A. P.-C.

Sectional Electrical Paper Machine Drive. Allgemeine Elektricitäts-Gesellschaft. Fr. pat. 706, 702 (Nov. 29, 1930).—In paper machines which are required to have a wide range of speeds, a double set of reducing gears is provided between each motor and the corresponding section shaft, one set having double the reducing ratio of the other. This permits of operating the motor at a higher speed when low machine speed is required than when a single set of reducing gears is used.—A. P.-C.

New Rockwood Drive. J. R. Hopkins. Paper Mill 54, No. 31: 4 (Aug. 1, 1931).—In the Rockwood short-center drive the motor is mounted on two pivoted arms or brackets so that part of the weight of the motor is used to maintain in the leather belt a prescribed, known belt tension. It can be mounted on floor, ceiling or wall, but cannot operate with the axis of the driven pulley lower than the axis of the motor pulley.—A. P.-C.

Mechanical Handling by Overhead Rails in the Paper Industry. Anon. Industrie Papeterie 10; 271-277 (July 1931).—A description of the Tourtellier, tubular monorail, overhead conveyor system, with illustrations of a number of its applications in paper mills.—A. P.-C.

Log Barking Machine. Franz Himmeisbach and Hermann Tormin assignors to Imprevu Holzimpragnierung and Holzverwertung Aktiengesellschaft. U. S. pat. 1,791,242 (Feb. 3, 1931).—In order to be able to bark long logs, a cutter head is rotatably mounted on a pivoted arm or beam, so that it is not only movable to and from the axis of the log by rocking the arm, but is also capable of a rocking movement about an axis extending transversely of the axis of rotation of the arm. The transverse axis is preferably approximately tangential to the log circumference at the part where the cutter is operating. The rocking movement or "wabble" about the transverse axis is imparted by means of two feelers resting on the log on opposite sides of the cutter head, one of the feelers being vertically adjustable to regulate the tilt of the cutter head required to bark a tapering log without producing ridges. To regulate the depth of cut, the cutter head is adjustable in its carrier without interfering with the adjustment of the feelers. The lengthwise movement of the log under the cutter head produces a lateral thrust on the latter, tending to twist it if the point of support is a substantial distance above the log; but when the axis of the pivot carrying the cutter head is nearly level with the cutting plane, there is no effective leverage for such twisting.—A. P.-C.

Log Barker. C. B. Thorne. U. S. pats. 1,796,632 and 1,796,633 (March 17, 1931).—*No. 1,796,632*—In this invention a grate form of agitator forming the bottom of the pocket is used to disturb logs held in a pocket. The grate bars or links are maintained in constant motion through the operation of cranks, and thus keep the logs rubbing against one another. The grate bars may extend longitudinally of the pocket and be given a simultaneous up-and-down and longitudinal to-and-fro motion, or they may extend transversely of the pocket and be rocked about a pivot so as to feed to the logs through the pocket. A cam-shaped arm at the discharge end of the pocket helps to remove the logs after removal of the bark. *No. 1,796,633*—The disturbance required to rub the logs against one another is produced by means of series of plungers operating in steam, hydraulic or pneumatic cylinders placed below the bottom of the pocket. The intakes of the various cylinders are connected in the desired order to ports in a valve casing inside which is a rotary valve so that the plungers are operated successively in any desired order. The sides of the pocket may be formed of rollers pivoted at their upper and lower ends to facilitate the progress of the logs through the pocket. Chains may be provided, stretching lengthwise of the pocket and resting on top of the logs to help keep them in the pocket.—A. P.-C.

Machine for Producing Wood Pulp. John A. Wiener assignor to Oswego Board Corp. U. S. pat. 1,795,064 (March 3, 1931).—A relatively coarse-grained fiber for wall boards, etc., is prepared by means of series of circular saws mounted on a carriage that reciprocates beneath a stationary hopper in which the wood is placed and fed to the saws by gravity. The saws are rotated in the direction of the grain of the wood and slice or shred, as well as partially grind the wood, during the forward and backward travel of the carriage. The sawing element comprises a relatively large number of thin serrated discs, mounted close together on a common shaft and driven at 1000 to 2000 r.p.m. The teeth of the saws are relatively coarse (about 3 points per inch) which affords the required clearance to prevent choking of the saws. The saw carriage reciprocates at 100 to 150 feet per minute. The teeth of the saws are preferably of the ratchet type, instead of V-shaped. During the forward movement of the saws, the radial or steeper faces of the teeth bite into and effect rapid reduction of the wood; during the return movement the tangential faces of the teeth effect lighter cuts and tends

rather to score than to slice the wood. It is claimed that this gives a product superior to that obtained with ordinary wood grinders or other disintegrating devices of the reciprocating type that effect identical cuts during the forward and backward travel.—A. P.-C.

Machine for Disintegrating Waste Wood. Julius Bing assignor to Magnet-Werk G. m. b. H. U. S. pat. 1,803,230 (April 28, 1931).—Slabs edgings, etc., are disintegrated in a machine comprising a casing provided on the inside with slanting ribs formed with cutting edges, and a rotary body inside the casing and also provided with longitudinal ribs forming cutting edges. The rotary body tapers off towards the inlet, first at a very acute angle and then in an angle forming a steep incline with the axis of the rotary body. At least one of the ribs of either the casing of the rotor protrudes beyond the portion of the motor which is highly tapered towards the axis of rotation. The intermediate product thus obtained is further disintegrated in a second machine, which may be similar in general construction, though shorter in length and having disintegrating elements of finer constructions, and which may be incorporated in a unitary structure with the first machine. After passing through the second disintegrator, the material is ground to finished pulp in known manner.—A. P.-C.

Device for Charging Pulp Digesters. Per A. Fresk. U. S. pat. 1,802,644 (April 28, 1931).—With a digester filler in which the steam or air used for placing and compacting the chips is taken up again by the fan and recirculated repeatedly, trouble is encountered when the level of the chips in the digester reaches the level of the spreading device of the apparatus, which necessitates filling the top of the digester (about 8% the total capacity) by hand. This trouble is overcome by interrupting the recirculation and completing the filling operation by allowing the air to blow out into the atmosphere instead of recirculating through the fan.—A. P.-C.

Process for Simultaneously Cooking, Beating and Electrically Treating Pulp. Harry L. Horn assignor to Bagasse Development, Inc. U. S. pat. 1,780,750 (Nov. 4, 1930).—Bagasse or similar material is placed in a rotary digester containing a number of loose rods, which is then filled with sodium chloride solution (about 10 lbs. of salt per 100 lbs. of bagasse and 100 gal. of water) and rotated for 2 hours while passing an electric current through the solution. Lime and soda ash are added and the digester is steamed for 2 hours at 30 to 50 lbs.—A. P.-C.

Press Roll for Wet Machines and Pulp Thickeners. William M. Gardella assignor to Oliver United Filters, Inc. U. S. pat. 1,793,688 (Feb. 24, 1931).—The object of the invention is to provide a press roll that will entrap the water pressed out of the sheet and prevent it from being re-absorbed on each side of the nips. This is attained by using a roll with a perforated surface, and provided with valves which register with the perforations and which can open under the action of the pressure between the two rolls. For example, the perforated shell of the cylinder is covered by a rubber jacket which is cut in 3 intersecting lines to register with each perforation, thus forming valves. In order to prevent the latter from opening outwards, the rubber jacket is covered with a wire screen.—A. P.-C.

Method and Apparatus for Removing Water from Pulp Webs. A. Danninger, H. Schmolka and R. Kastner. U. S. pat. 1,802,407 (April 28, 1931).—In order to increase the amount of water removed in the last press of pulp-drying machines, the web is heated before passing through the last press. This is effected by placing a number of heating elements (preferably electric) provided with reflectors, close to the path of the sheet. A further feature of the invention consists in using the portion of the web just in front of the web presses as an electric resistance heating element.—A. P.-C.

Device for Increasing the Capacity of Wet Machine and for Increasing the Thickness of the Sheets Formed Thereon. Sigurd Norman. U. S. pat. 1,806,238 (April 14,1931).—An endless piece of felt is allowed to dip into the vat so as to engage the surface of the cylinder on the dipping side thereof. The suction inside the cylinder maintains the felt in intimate contact with the surface of the cylinder. Means are provided for adjusting the amount of lap of the cylinder by the felt, and the thickness of the sheet formed on the cylinder is regulated thereby.—A. P.-C.

Method of and Means for Storing Pulp Coming from the Wet Machine. John E. Hanny assignor to Crown Willamette Paper Co. U. S. pat. 1,800,215 (April 14, 1931).—Relatively small pieces, or "noodles," of pulp from the wet machines are delivered on to a conveyor which discharges them into a blast of air travelling at high velocity through a "charger" where the "noodles" are disintegrated into small particles which are carried by the air blast to a suitable storage bin. The air reduces to some extent the moisture content of the pulp (e. g., from about 25% to about 21.5%) and forms the pulp in a lightly packed mass in the storage bin, from which it can be easily sluiced when required.—A. P.-C.

Lap-Folding Device for Wet Machines. Jean K. Vanatta assignor to Nekoosa-Edwards Paper Co. U. S. pat. 1,792,558 (Feb. 17, 1931).—The web, instead of being wound on one of the press rolls to a certain thickness, is passed through the press and subsequently delivered from the felt on to an inclined apron. The latter is hinged at its upper end and swayed back and forth so as to deliver the web in folded laps on a horizontal table —A . P.-C.

Fiber Product and Process of Producing the Same. George A. Richter assignor to Brown Co. U. S. pat. 1,793,194 (Feb. 17, 1931).—In order to obtain a dried pulp, such as kraft or alpha-fiber, which is naturally difficult to hydrate, in a form which is more easily hydrated on beating, part of the pulp is beaten and is then mixed with unbeaten pulp before drying on a pulp-drying machine.—A. P.-C.

Suction Box. George Peebles assignor to Selbec, Inc. U. S. pat. 1,791,535 (Feb. 10, 1931).—The bearing surface over which the wire travels consists of two parallel, machined, brass rolls, driven positively at the same peripheral speed as the wire. The seal between each roll and the body or trough portion of the suction box consists of a lignum vitae bearing extending the full length of the suction box. The ends of the space between the rolls are sealed by means of blocks, pressed down upon the rolls and extending into the space between the blocks, being secured by bolts provided with springs to automatically take up the wear.—A. P.-C.

Doctor for Paper-Machine Rolls. Herman L. Kutter assignor to the Black-Clawson Co. U. S. pats. 1,797,290 and 1,797,291, (March 24, 1931), and 1,798,887 (March 31, 1931).—*No. 1,797,290*—The doctor blade is supported on a body portion consisting of a relatively large pipe to secure sufficient rigidity and eliminate sagging at the center. The body is adjustably pivoted about an axis parallel to, but not coincident with, the axis of the body, so that the effective pressure of the doctor blade against the roll resulting from the weight of the body portion is sufficient without the use of additional weights, and can be varied as desired. *No. 1,797,291*—A doctor constructed in accordance with the previous patent is provided with a handle having a cam face so that the doctor can be rapidly removed from or brought into engagement with the roll without disturbing its adjustment. *No. 1,798,887*—In a couch or press roll doctor constructed as described above, the blade extends back to the support and is inclined downwards and backwards to deliver the broke on to a transversely extending broke-conveyor. The blade is proportioned and mounted so that, when it is covered with broke, the weight of the latter is uniformly distributed and does not change the pressure of the blade against the roll.—A. P.-C.

Fourdrinier Paper Machine. A. Aldrich. U. S. pat. 1,790,082 (Jan. 27, 1931).—In removable-table fourdrinier machines the table is constructed so that it can be secured by means of pivoted bolts to the feed box support, and the latter is pivotally mounted

so that it can be raised or lowered and tilted according to the pitch of the wire.—A. P.-C.

Ball-Bearing Mounting for Dandy Rolls. Peter S. Sinclair. U. S. pat. 1,783,317 (Dec. 2, 1930).—The dandy roll is mounted on ball bearings surrounding a stationary, hollow shaft made of non-corrodible material. The shaft is provided with water-discharging openings, and the ball bearings are mounted near these openings.—A. P.-C.

Slice for Fourdrinier Paper Machines. Charles W. Valentine, assignor to The Bagley & Sewall Co. U. S. pat. 1,803,044 (April 28, 1931).—A secondary slice is placed in the head box behind a slice constructed according to U. S. pat. 1,619,168 of March 1, 1927. The secondary slice is constructed and mounted so that it can be adjusted toward and away from the apron board independently of the main slice. The secondary slice is particularly valuable in obtaining proper formation in the manufacture of fine papers on wide high-speed machines.—A. P.-C.

Suction Box for Paper Machines. Ostilio Severini assignor to Societa Invenzioni Brevetti Anonima-Torino. U. S. pat. 1,791,065 (Feb. 3, 1931).—The bearing portion of the box which is in contact with the wire comprises a small portion, limited to the box edge, in which sliding contact takes place, and a number of rolls, mounted lengthwise of the box and driven at the same peripheral speed as the wire, so as to be in rolling contact only with the wire.—A.P.-C.

Method of and Apparatus for Guiding Paper-Machine Wires. Louis P. Schweitzer. U. S. pat. 1,791,288 (Feb. 3, 1931).—A source of light is mounted on one side of the wire near the edge, and a selenium (or other light-sensitive) cell is mounted on the other side of the wire in such a way that the light is transmitted to the cell only during deviations in one direction. Yieldable means constantly urge deviation of the wire in the direction to let light pass to the cell, and the variation in current through the cell caused by the light operates a mechanism to correct the deviation.—A.P.-C.

Shake Apparatus for Fourdrinier Wires. John W. Vedder assignor to Rice, Barton and Fales, Inc. U. S. pat. 1,798,440 (March 31, 1931).—A piston is mounted on the end of the journal of the roll to be shaken (preferably the breast roll). A variable-speed motor operates a valve which controls the admission of compressed air (or other fluid) alternately to each side of the piston on the roll journal. A rate of 50 to 1000 complete cycles per minute can be obtained. In order to dampen the vibrations at the end of each stroke, the end of the tail shaft on which is mounted the vibrating piston fits into a cylinder acting as an air, oil or spring buffer. The amount of space in the cylinder can be adjusted by means of a screw plug in the end of the cylinder.—A.P.-C.

Suction Box for Suction Rolls. Guyon Miller and Albert H. Stanley assignors to Downingtown Manufacturing Co. U. S. pat. 1,800,149 (April 7, 1931).—The packing strips are each supported on pneumatic tube, filled with air, so that the pressure with which the strips bear on the inside of the shell is uniform throughout their length and can be adjusted by varying the air pressure in the pneumatic tubes. The deckles are mounted so that they can be adjusted or removed without dismantling the roll.—A.P.-C.

Suction Roll. Earl E. Berry assignor to Beloit Iron Works. U. S. pat. 1,799,775 (April 7, 1931).—The invention provides means for adjusting the tension of the packing between the suction box and the interior surface of the shell in such a manner that further adjustment after the suction roll is put into operation is unnecessary. The sealing means consist of a floating packing head comprising a flexible apertured plate with grooves running the full length along each side to receive the resilient packing strips. At the ends of the packing head are longitudinally slidable ends carrying end packing strips. The head is floatably supported from the walls of the suction box. Adjustment of the packing head along its length is provided for by a number of adjustable helical springs enclosed within cylindrical housings. Once the packing has been properly adjusted, before mounting the suction box in the shell, it does not need further attention; the packing slowly wears away until it has relieved all the initial spring tension, after which the packing merely brush the inside of the shell.—A.P.-C.

Cylinder Paper Machine. Charles J. Barnes. U. S. pat. 1,799,350 (April 7, 1930).—In order to obtain paper having substantially the same tearing strength in all directions, a multiply web is formed on a multicylinder machine in which some or all of the cylinders are mounted with their axes at an angle other than 90° to the direction of travel of the felt.—A.P.-C.

Friction Resistance Device for Winders. James A. Cameron assignor to Cameron Machine Co. U. S. pat. 1,791,659 (Feb. 10, 1931).—This is an improvement to U. S. pat. 1,707,047 and provides specific friction means which resist at a gradually decreasing rate the upward displacement of the riding roll as the amount of paper in the wound roll increases.—A.P.-C.

Winder. Charles W. Valentine and Alfred F. Helin assignors to The Bagley and Sewall Co. U. S. pat. 1,803,043 (April 28, 1931).—In order to obtain the required frictional engagement between the core and winding drum when beginning a roll, without using a pressure or riding roll, the two winding drums are mounted so that they can be moved towards or away from each other. When starting to wind a new roll, the drums are placed somewhat apart to increase the frictional contact with the core, and they are gradually brought closer together as the roll builds up. Each drum is driven by a separate electric motor in axial alinement with the drum.—A.P.-C.

Paper Machine Drive. Charles W. Valentine and Peter N. Osterland assignors to The Bagley and Sewall Co. U. S. pat. 1,803,045 (April 28, 1931).—The power is transmitted from a constant-speed shaft to each section of the paper machine through a pulley associated on one side with a clutch and on the other with a planetary transmission. The latter is used for starting up the section and running it at low speed, and may be constructed to permit of reversing the direction of the section, more particularly for the calenders.—A.P.-C.

Paper Slitting Machine. Ralph S. Johnston and Samuel M. Bratton assignors to The Pusey & Jones Corp. U. S. pat. 1,797,662 (March 24, 1931).—Each of the lower slitters is mounted on a sleeve, which surrounds a shaft common to all the slitters. The sleeve rotates with the shaft (e.g., it is splined to the shaft or is keyed to it by means of a set screw or clamp collar), and its position can be adjusted lengthwise of the shaft. Each sleeve is supported in bearings (preferably ball bearings) which serve also as supporting bearings for the shaft, so that the latter need be constructed to take care only of the torque incident to the rotation of the slitters. The bearings are constructed and mounted so as to be moved as a unit with the respective slitters when the positions of the latter are changed.—A.P.-C.

Simple Winder. Reifegerste. Wochbl Papierfabr. 69, No. 24; 573-574, (June 13, 1931).—By means of illustrations the author explains the construction and operation of the winder for paper, which requires very little power. The advantages and disadvantages of the winder on cylinder and fourdrinier machines is given. It is to be recommended for Yankee and one sided and machine finished papers.—J.F.O.

Steel in the Pulp Industry. W. Sembritzki, Wochbl Papierfabr. 69, No. 24, 575 (June 13, 1931).—In place of acid resisting bronze, copper, and lead lined copper tubes, V4A steel from Krupps is used with success. It is recommended for the various fittings of a digester. This steel has the advantage of lasting longer than the metals which it is replacing, and it also decreases the formation of gypsum at the screens and pipe lines in the digesters. However, the steel is not as pliable as the other metals. Pumps and valves for the manufacture of sulphite pulp are made of this new steel.—J.F.O.

Formation of Foam on the Paper Machine. Zellstoff Papier, II, No. 4: 204 (April, 1931).—The various causes and results of the formation of foam are given. The removal of foam depends upon the cause, as for example, with an excess of rosin size, more alum is used. Sprays should be used in the head box. Rape oil and petroleum can be used but care must be taken so that the finished paper does not have the odor of oil.—J.F.O.

Recent Additions in the Paper Industry. M. Wintermeyer, Wochbl Papierfabr. 62, No. 13: 299-305; No. 14, 326-330 (Mar. 28, April 4, 1931); Papier-Fabr. 29, No. 13: 193-198; No. 14: 212-219, (Mar. 29, April 5, 1931). The speaker spoke of the following new and improved apparatus used in the manufacture of pulp and paper. 1. Sliver screen, by Kubler and Niethammer, for pre-screening the stock from the grinders. The screen, whose depth of immersion is less, is shaken by means of an eccentric which acts in such a manner that the stock is given a forward motion. 2. Apmew screen for pulp and paper stock which acts by the impacts of narrow blades and is under excess pressure. 3. Voith beater in which the stock is well mixed by giving it a vertical and cross motion. 4. Rod mill for the treatment of stock which is only half finished, the energy required is about 30 horse power per 10 tons stock. 5. Construction of a centrifugal pump for pure water, back water and stock. 6. Description of a filter for crumbled ground wood, pulp and rag stock. 7. High pressure inlet for a fine paper machine with the lowest speeds by the use of a so-called perforated roll. 8. Rotating suction box or roll, according to the method of Karlstad, which through its rotation, saves on the wire. 9. A machine for truing the tops of suction boxes. 10. Suction rolls and presses, their construction, arrangement and bearings. 11. Reversible wet press. 12. Voith Askania wire guide regulator. 13. Felt guide regulator using compressed air, Moufang patent. There are still other apparatus mentioned, of lesser importance.—J. F. O.

How to Prevent Scalding Accidents When Opening Rotating Spherical Digesters. F. Lesser. Papier-Fabr. 29, No. 16: 249-252 (April 19, 1931). Instructions are given for the safe opening of spherical digesters when such are used without blowing out or washing the pulp. The digester helpers must be sure that there is no pressure in the digester when they start taking off the top. By following the precautions given there should not be any accidents due to scalding.—J. F. O.

Recent Ideas for the Barking of Wood. W. Schmid. Papier-Fabr. 29, No. 16: 241-244 (April 19, 1931). Several of the recent methods for the removal of the bark by washing and rubbing are described. According to S. P. Holgersson, Swedish patent 69,348, the moistened wood comes in contact with a number of flexible chains which are traveling at a high speed and are so supported that the resulting centrifugal force causes the chains to rub against the logs to be barked. According to the Austrian patent 1,770,220, of Guettler, the logs are given such a motion that they are continually rubbing against each other, thus removing the bark, which falls in a V trough and there washed away. The logs are placed in containers with water, a number of such containers being used in series, the water level being so changed that the logs move from one container to the following. Methods of operation and construction are given and the article is accompanied with many illustrations.—J. F. O.

Screen Plate for Pulp and Paper Stock. Aktiebolaget Nordiska Armatur-fabrikerna, Stockholm. Ger. pat. 518,271 (Nov. 30, 1928). The invention concerns a screen plate for pulp and paper stock with parallel rows of slits lying in the same line, in which the slits in the adjacent rows lie displaced to each other and the number of slits lying in the same line in each second row is larger than in the adjacent row.—J. F. O.

Method for Joining the Ends of Metal Cloths and Wires, Especially Those Used in the Manufacture of Paper and Board by Soldering Without the Use of a Sewing Wire. Rene Franck, Selestat, France. Ger. pat. 513,743 (April 2, 1927). Between the ends of the warp wires of the edge of the cloth or wire to be joined, threads of soldering material with or without metal filings of higher melting point is placed; whereupon the edges of the cloth or wire are layed upon each other and the soldering material is finally brought to melting.—J. F. O.

Arrangement for Receiving the Impulse of a Consistency Regulator on Pulp Machines Used for the Removal of Water. Arca Regler, A. G. Berlin, Ger. pat. 519,496 (June 11, 1929). The invention utilizes the impulse of the motion of the stock at the last dam of the screen section of the machine.—J. F. O.

Process and Device for the Manufacture of Cards with Irregular Edges Similar to Vat Papers. Richard Roth, Berlin. Ger. pat. 514,054 (March 22, 1928). A web of paper not yet hardened is led between dandy rolls with raised surface borders crossing itself at right angles, so that a corresponding weakness occurs in the wet paper at the crossing of the lines.—J. F. O.

Couch Press. Johannes Raith, Sofia, Bulgaria. Ger. pat. 519,-111 (Jan. 20, 1928). The invention concerns itself with a couch press in which the manchon felt, used as the long felt, runs over a regulating roll, a stretch roll and the top couch roll provided with a rubber covering of medium hardness or with a copper covering.—J. F. O.

Liquor Towers Used in the Manufacture of Pulp. Stickel, Wochbl Papierfabr. 62, No. 17: 404-405 (April 25, 1931). In reference to its chemical properties, wood is an ideal material for construction in pulp mills, but because of mechanical properties it is being superceded by reinforced concrete, especially in the building of acid towers. However, the author recommends the lining of the towers with wood which can be coated with some sort of asphalt material and renewed whenever it is required.—J. F. O.

Mechanism for Superimposing Sheets of Paper. Peter J. Christman, Jr. U. S. pat. 1,789,965 (Jan. 27, 1931).—The sheets coming from the cutter are delivered to a pair of lapping rolls which are driven at a lower speed than the feed rolls. The top lapping roll is provided with a row of projecting needles, and the speed of the rolls is timed so that the needles engage the rear edge of each sheet, thus raising it and permitting the forward edge of the succeeding sheet to pass under it. Means are provided for stripping the sheets from the needles of the top lapping roll. From the lapping rolls the sheets are fed through rolls driven at a lower speed than the lapping rolls, and delivered to suitable interfolding mechanism.—A.P.-C.

Device for the Prevention of the Unrolling of a Paper Band onto the Roll of the Roll Press in a Parchmentizing machine. Papier and Pergamentpapierfabrik Seltmans, G.m.b.H. Ger. pat. 514,299 (March 2, 1930). Addition to Ger. pat. 506,696. In further carrying out the device according to basic patent 506,-696, a wire drum is arranged with the same speed of rotation as the press rolls.—J. F. O.

Wire Drum for Centrifugal Screens in which Vanes Revolve within a Stationary Wire Drum. Seidl & Mayer, Munich, Ger. pat. 512,461 (May 14, 1927). The axes of the perforations of the wire drum are arranged in the direction of motion of the centrifuged stock.—J. F. O.

Fourdrinier Machine with Separate Table Roll Bars, Whose Parts are Shaken in Different Tempo. Paul Erkens, Duren, Germany. Ger. pat. 517,229 (Feb. 25, 1927). Addition to Ger. pat. 406,942. In further carrying out the original patent 406,-942, there is a parallel shaking of the parts as well as the segments being shaken alone.—J. F. O.

Device for Guiding the Course of Wires and Felts on Paper Machines by Means of a Roll Whose Axis is Capable of Swing-

ing.—C. G. Haubold, A. G. Chemnitz, Ger. pat. 520,122 (June 9, 1927). The axis upon which the rolls swing comes in contact with the edge of the wire or felt.—J. F. O.

Device for Guiding a Cutting Machine or Similar Apparatus by the Use of a Cell Sensitive to Light. Heinrich Geffcken, Hans Richter and Karl Biagosh, Leipzig. Ger. pat. 521,270 (Aug. 14, 1929). The part which activates the guide is led over a cell sensitive to light by means of a mechanism with a certain displacement in regard to the rate of work being accomplished. —J. F. O.

Rewinder and Slitter, Especially for Paper Rolls. Josef Balensiefer, Munich. Ger. pat. 520,210. The invention is characterized by having the bearing of the lever arm so it can be adjusted.—J. F. O.

Winder Device. Jagenberg Werke A. G. Dusseldorf. Ger. pat. 512,206 (July 14, 1928). The invention concerns itself with a winder device with a winder shaft on stationary bearings, in which the roll being wound is supported by rolls with counter weights.—J. F. O.

Specialties

Insulating Paper for Cables Carrying Heavy Currents. Ernest Kirch. Papier 34: 861-873 (Aug. 1931). A review of our knowledge of the behavior of paper insulation with a brief outline of the principles governing the manufacture of paper to be used for the insulation of cables carrying heavy currents.—A. P.-C.

Manufacture of Coated Papers. Norman Clark. Paper Industry 13: 740-743 (Sept. 1931). A brief discussion of the principal factors to be considered in ordering raw stock—A. P.-C.

Process and Apparatus for the Manufacture of Marbled Paper. Victor Antoine. Fr. pat. 705,950 (Nov. 10, 1930). One or more solutions of dye are delivered in regulated amounts on the wet sheet on the paper machine wire. The color distributors, each of which extends across the full width of the machine, is given a transverse reciprocating motion, the amplitude and direction of which can be regulated relatively to the shake of the machine wire.—A. P.-C.

Operating Standards in a Fine-Paper Mill. H. M. Grasselt. Paper Industry 13:625-627 (Aug. 1931). A brief discussion of some fundamentals that enter into manufacturing control.—A. P.-C.

Manufacture of Wallboard or Insulating Board. Frank W. Young. U. S. pat. 1,794,433 (March 3, 1931). A thick sheet of pulp (about ¼ inch when dry) is formed on a cylinder mold from stock at a consistency of 2% to 4%. In order to increase the thickness of the sheet, an auxiliary endless wire cloth is led into a vat at a point some distance below the point of emergence of the cylinder from the stock, and comes into contact with the cylinder at a point higher than the level of the stock in the vat. In this way an additional sheet forms on the auxiliary wire cloth and is bound with the one formed on the cylinder by the pressure between the cylinder and the wire cloth, the latter leaving the cylinder only at the point where the combined sheet is stripped from it to be delivered to the presses, etc.—A. P.-C.

Machine for Manufacturing Prepared Roofing. Robert Maclean assignor to Amalgamated Roofing Co. U. S. pat. 1,794,719 (March 3, 1931).—On leaving the saturating tank the web is passed under a hopper suitably divided into compartments from which grit surfacing is delivered on the web. The compartments are constructed so that the same-colored grit can be applied across the full width of the web, or that parallel longitudinal strips of different colors can be applied. In the latter case, wavy lines can be produced by giving the feed hopper a transverse reciprocating motion. When differently colored grits are used, the excess of each color is recovered separately by passing the surfaced sheet around a roll so as to bring the surfaced side underneath, thus allowing the excess grit to fall into a partitioned receiving hopper, the partitions being placed at the lines of separation of the differently colored grits. When wavy lines are produced, the receiving hopper is reciprocated in synchronism with the feed hopper, so as to keep the different color separate.—A. P-C.

Method of and Apparatus for Finishing Roofing Units. Chester R. MacDonald assignor to the Patent and Licensing Corp. U. S. pats. 1,783,849 and 1,783,850 (Dec. 2, 1930).—The individual shingle strips are supplied to clamps carried by a pair of endless chains. The strips are carried while hanging vertically downwards, over a roll partly immersed in a tank of molten asphalt which is thus applied to the cut edge of each strip to waterproof it; disks of larger diameter are also provided to apply asphalt to the slots which are cut out between the individual shingles of each strip. The butt portions of the strips are coated by passing over another roll, which is also partly immersed in the asphalt but at a higher elevation than the first roll. The butt portion is finally surfaced with grit, by passing over a travelling conveyor carrying grit and driving at a slightly higher speed than the chains carrying the strips. No. 1,783,849 covers the method and No. 1,783,850 the apparatus.—A. P.-C.

Method of and Apparatus for Making Multiple Building Board. Harry A. Cumfer assignor of one-half to Willard J. Mason. U. S. pats. 1,802,878 to 1,802,880 (April 28, 1931).—A number of webs are simultaneously sprayed with a waterproof adhesive such as molten asphalt and pressed together to form a single multi-ply sheet. Another web is simultaneously corrugated between a corrugating roll and an endless corrugating conveyor built up of ribbed pressure bars mounted on a pair of endless chains which remain in contact with the corrugated sheet to prevent the corrugations from collapsing. While still in contact with the corrugating conveyor, the corrugations are scored in circles, the corrugated sheet is applied to the multiple base sheet, and the scored portions are completely detached and applied to the base sheet about opposite the points where they were removed from the corrugated sheet. *No. 1,802,878* covers the apparatus and *No. 1,802,879* the process. *No. 1,802,880* covers the process whereby a relatively flexible fibrous sheet is continuously fed at an angle and adhesively united to a stiff base sheet moving in a straight line, the arrangement being such that the sheet being fed at an angle is corrugated during its travel prior to being united with the base sheet—A. P.-C.

Reinforced Filter Paper and Process of Making Same. Fred W. Manning assignor to Filter Fabrics, Inc. U. S. pat. 1,782,784 (Nov. 25, 1930).—The pulp (which may consist of cotton linters, wood pulp, asbestos, wool, kieselguhr, decolorizing carbon, etc.) may be impregnated in any desirable manner (e.g., in a beater, mixing tank, filter drum tank, or while being passed through a treating chamber) with treating agents such as copper sulphate, copper chloride, or salts of other metals for the removal of sulphur compounds, etc., from the fluids to be filtered. If the paper is impregnated with a solid in the treating chamber, the solids may be deposited in or on the sheet by means of the passage of a treating fluid such as steam or air through the sheet. The sheet is formed by flowing the pulp on to a suitable fabric, supported on a cylinder mold or a fourdrinier wire; it is then passed through a treating chamber where a suitable fluid is passed through the sheet to remove sufficient moisture to give the sheet enough rigidity to enable it to keep its form, after which drying is completed in a festoon drier—A. P.-C.

Fiber Conduit. William G. Johnson assignor to Line Material Co. U. S. pat. 1,800,538 (April 14, 1931).—In order to obtain both ductility and compressive strength, the inner layer of the conduit is formed of pressed pulp fiber and this inner layer is surrounded by a number of plies of sheet pulp.—A. P.-C.

Section of the

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Power Cost Accounts*

By John Whitmore[1]

(Continued from Issue of November 19, 1931)

Equipment

First, however, it seems necessary to pause to consider certain fundamental conditions of all factory accounts; equally of power plant accounts, and of all other factory process accounts. In all we are dealing with plant charges, that is with the cost of plant and with the expense of repairs and renewals.

The first thing that is desirable, and even essential, at the outset of all factory accounting is an orderly inventory of the plant with the costs or values for all items in it. Briefly one may say that this should be in the form, or as nearly as possible the equivalent thereof, in which plant appraisals are stated by appraisal companies. In each division of the factory accounts one must know all the plant costs or values involved, to make it possible that amortization charges in respect of all of them shall be made available, and the lifetime of the various units carefully judged for there is an important question as to the accounting method.

To illustrate, it is plain that the cost of a boiler is a part of the cost of the total steam produced in it between the time it is new and the time it is worn out. The cost of the coal consumed is also a part of the cost of the steam produced. But between these two costs there is a distinction, long a subject of discussion. The item of coal cost is paid for month by month, practically as it is used. The item of boiler plant cost is paid in advance, we may say, for twenty years.

There is a method of calculating plant amortization charges by which *an equal sum* is charged into the cost of the product in each year throughout the life of an item of construction or equipment, but whereby the sum of these charges in the years of the calculated life is not merely the original cost of such an item, but the original cost plus interest on the balances remaining unextinguished from year to year. The unextinguished balance (cost, less amortization to date) is, of course, falling from year to year, and the interest thereon is falling. It follows that the part of the annual charge which is amortization of cost is correspondingly increasing, for the total annual charge is always the same. The annual charge to operation has its corresponding credit partly in the reserve for amortization of cost and partly in an interest account and so in the profit and loss account. The effect is that the cost is exactly extinguished in the calculated life, while the expense of any interest is offset to the extent of the interest credit on the unextinguished balance of plant investment. That this is exact accounting may be seen more clearly if it is supposed that the capital for investment in plant is borrowed, and is repaid year by year as an amortization rate is reserved out of profits. The interest debited profit and loss in this connection, and the interest credited, would then be equal (if the interest rates were equal) in each year. The charge against operations, and so into the cost of products, is the same in every year. The accounts of every year are in this respect upon exactly the same basis, whereas with a different method all years might bear an equal amortization charge (sufficient to extinguish cost), but the earliest year would bear the maximum expense of investment (whether capital were owned or borrowed makes no difference) and all later years a decreasing expense.

I do not think the procedure just described has its highest importance in manufacturing accounts, where investment in plant tends to be fairly constant. Its highest importance is where there is a large investment in wasting assets. But it is no less just, it no less reflects the truth, in the one case than in the other.

Still more imperative, it seems to me, is special consideration of the expense of repairs and renewals. In the case of the boiler this expense is certainly a part of the cost of steam, i.e., a part of the cost of all steam produced. But far from being incurred evenly every day or every month that the boiler is operated, it is incurred at fairly long intervals and often in rather large amounts, and as regards the individual boiler, at times when no steam at all is being produced. Obviously the only way by which the expense can be made to fall upon all the steam production equally is to make constantly an equal reserve for repairs and renewals in each month and year of actual running. The alternative, which we have all seen in actual practice, is to have the steam costs run up from time to time to perfectly unreal figures because repairs which correspond perhaps to a year's operation are made in a small fraction of the year.

It is therefore assumed in the present article that the plant amortization charges in each month's accounts are equal charges per month throughout the life of the units of equipment, and that these are calculated to provide for

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[1] Member, American Institute of Accounts.

initial cost plus interest annually upon the unextinguished balances of the same; and that the repairs and renewals charges are constant equal charges per month, sufficient according to the best engineering judgment available, to provide for the repairs and renewals expense to be incurred throughout the lifetime. Except that, as I have already suggested, it may be very proper and necessary to use different rates for boiler repair and renewal reserves according as the coal used is of high or low quality, and even according to its special characteristics.

I have in the foregoing referred to one fuel only, but steam is generated with various fuels—coal, oil, and natural gas, and various waste fuels, especially the waste gases from steel works blast furnaces. Waste fuels should be credited to waste fuel accounts at their value as ascertained in the steam production from them, and the relative cost of available purchasable fuels. The waste fuel accounts should then be charged with all the expenses of operation, repairs and renewals, and amortization, in connection with all equipment for their recovery, transmission or transportation, and delivery to the boilers. Balances thereafter remaining at the credit of waste fuel accounts are to be transferred to the credit of the processes producing them. The credit for steam produced by boilers operated with the waste heat of metallurgical furnaces is to be determined according to the same principles.

Accounts

I will close the present article with a tentative outline of the boilers account, and the accounts preliminary thereto in the power cost ledger. As regards coal, the debits to the power cost accounts begin with the coal transferred from storage to boilers, credited in the coal stores ledger, already described. The first account in the power cost ledger may be:

Coal Unloading, Storing, Crushing, Etc.
to include conveying to boiler house, weighing and analyses

The debits are:	The credits are:
Labor	Boilers account at rates per ton for these expenses adjusted to approximate current costs as shown by the account
Power	
Supplies	
Laboratory charges	
Miscellaneous expenses	
Repairs and renewals reserve	
Plant amortization reserve	

Or if the coal for the boilers is pulverized, the credits to the accounts in the coal stores ledger, and to the foregoing account for unloading, storing, etc., will be debits to the pulverizing account which may be as follows:

Coal Pulverizing Account

Debits

Coal at pulverizing plant, raw and in process, at beginning of month.	Balance from the previous month determined as described in connection with the closing credit hereto.
Coal delivered to pulverizing plant in the month	Delivery from cars as received; or weighing from storage, and sampling at least for moisture. The storage accounts should give the thermal unit contents per unit of dry coal weight, with satisfactory closeness.
Unloading, storing, conveying, etc.	Average of all costs per ton from unloading to delivery at pulverizing plant, whether storage intervenes or not.
Pulverizing plant expenses:	
Labor	
Steam	
Electric current—power	
Electric current—light	
Supplies	
Laboratory charges	

Debits

Miscellaneous expenses	
Superintendence	
Repairs and renewals reserve	
Plant amortization reserve	

Credits

Boilers account (or an intervening boiler house storage account)	Pulverized coal weighed to boiler house bunkers, sampled for moisture and B.t.u. determinations; at cost as shown by this account for the month.
Coal at pulverizing plant, raw and in process, at close of month	

The foregoing account must have columns for gross weights, dry weights, and heat values in British thermal units, and these must be entered for the coal received and the coal delivered. The weight of any waste material rejected in the pulverizing plant must be entered in the gross weight and dry weight credit columns only. The columns will then give balances of gross weights and dry weights and heat values which should be a statement of the inventory at the end of the month in these terms, but which should be verified by such survey as is practicable and by seeing that dry weight and heat value figures are consistent. The value of the inventory may then be taken to be the dry weight balance at the average cost of dry coal per ton as charged to the account. After determining the value of the closing inventory, the balance is the cost of pulverized coal delivered to the boiler house.

The next accounts are for expenses of feed water treatment. These should be closed by a journal entry at the end of the month, debiting the total of them to the boilers account.

Water treatment—Labor
" —Chemicals
" —Steam
" —Electric current—power
" —Electric current—light
" —Supplies
" —Laboratory charges
" —Miscellaneous expenses
" —Superintendence
" —Repairs and Renewals reserve
" —Plant amortization reserve

The next accounts are for the expenses of boiler operation. These should be closed by a journal entry at the end of the month, debiting the total of them to the boilers account.

Boiler operation—Labor
" —Steam
" —Electric current—power
" —Electric current—light
" —Supplies
" —Miscellaneous expenses
" —Superintendence
" —Repairs and renewals reserve
" —Plant amortization reserve

Boilers Account

Debits

	Pounds of water	B.t.u. over 60° F.	Amount
Water—new			
Water—condensate			
Expenses of feed water treatment			
Exhaust-steam heat-content used for pre-heating feed water (heat content received over 60° F. from metered or calculated quantities and recorded pressures, less remaining heat content of the same steam delivered for other uses, similarly calculated—B.t.u. millions: ———)			
Heat content of boiler feed water in month in British thermal units, over 60° F., except as already debited this account in condensate item above			
Weight, heat content and cost of boiler feed water			
Coal			
Dry weight			
Heat value in B.t.u.			
B.t.u. added to water			
Percentage boiler efficiency			
Expense of boiler operation			

Credits

	Pounds of steam	B.t.u. over 60° F.	Amount
Steam account			
Water unaccounted for ———%			

In the foregoing account, exhaust-steam B.t.u. millions used, and B.t.u. millions in boiler feed water over condensate, are comparable figures, giving the measure of the recovery of the former in the latter. Coal and expenses of boiler operation, divided by B.t.u. millions added by the boiler, give the unit cost of the latter. The cost of the million B.t.u. in the steam produced is, of course, given by the closing credit to the account.

The final account is the steam account which is debited in accordance with the closing credit above. It is credited in accordance with the distribution of steam, first to boiler

house auxiliaries and coal and water expense accounts; then to steam engines and turbines, steam pumps, and any other users of live steam. The metering must be sufficient to make the distribution of quantities and consequently of thermal units with serviceable accuracy. The question then arises as to the pricing of this distribution and I believe a standard cost figure for the million British thermal units in steam should be used.

In the following articles I shall have occasion to point out certain disadvantages if the varying cost of steam consequent upon varying boiler capacities developed, enters into the costs of power; and again the varying cost of power, due not only to the same but to accumulating causes, enters into the costs of manufacture. The matter assumes different aspects in different industries: in the cost accounts of the machine industries there is the practically inevitable introduction of standard units costs for power, before the ultimate determination of the costs of products, while in the cost accounts of the chemical industries this is not the case. There is, I believe, only one means of correcting it everywhere, namely to use the most carefully determined standard cost figures, first for the million B.t.u. in steam, and then for the kilowatt hours of direct and alternating current, and for other units of power, to credit the accounts for their generated quantities and costs. This, of course, will always leave a balance, debit or credit, in these accounts. These balances I would close to special accounts, as steam gains and losses, direct current gains and losses, alternating current gains and losses, and so on, it being understood that these titles mean, for example, "alternating current gains and losses from varying loads and varying efficiencies, in comparison with standards established by the power engineer."

Summary

Is the keeping of such steam accounts as I have described a heavy undertaking? I think certainly not, but it may be worth while to re-state briefly what is involved in them, and to make a comparison in this respect with alternative procedures.

First, there is a particular arrangement of expense accounts which once established is no more trouble to keep than accounts for the same expenses arranged any other way. Beyond this the following are involved:

(a) The weighing, sampling and analysis of coal received (necessary in any case if one is to know what one is paying for).

(b) The weighing of coal consumed and sampling for moisture.

(c) The metering of steam produced
—without both of these there can be no knowledge at all of the actual efficiency of the boiler plant operations.

(d) An accounting for exhaust steam (containing about 90 per cent of the heat in the steam when it left the boilers), which I believe is absolutely necessary to the economic control of its production and utilization.

What are the customary measures of boiler plant performance? The most rough and ready is pounds of water evaporated for the pound of coal consumed. But this requires weighing of coal to the boilers, and metering either of water to or steam from the boilers. And when the result is accurately ascertained it means very little. What is the quality of the coal, the temperature of the boiler feed water, the temperature of the steam? Unless all these are known, pounds of water per pound of coal is of very indefinite meaning.

There is another and much more exact way of stating boiler plant performance. Under the normal atmospheric pressure of 14.7 pounds per square inch water boils at 212° F. The steam produced is of the same temperature. The additional B.t.u. taken up in the conversion of the water into steam are 970.2, these being the latent heat of evaporation in steam at 212°. On this basis, boiler performance for feed water at any temperature, and steam of any pressure and temperature, is expressed as "equivalent evaporation from and at 212°." The actual B.t.u. in a pound of the steam is taken from the steam tables, and the B.t.u. in the pound of water entering the boiler (also taken from the steam tables and being approximately temperature less 32) is deducted, and the result is divided by 970.2. The result is what is called "the factor of evaporation." The actual pounds of water evaporated are multiplied by this factor of evaporation, and the result is "pounds of equivalent evaporation from and at 212°." A further step is to take the same figure of B.t.u. in the pound of steam less the same in the water entering the boiler, multiply it by the pounds of actual evaporation per pound of coal, and divide this by the B.t.u. in the pound of coal. The result is the "percentage of boiler efficiency," or in other words, the percentage of recovery in the steam of heat units contained in the coal consumed. This differs from pounds of water per pound of coal in this important way: it isolates the boiler performance and measures it exactly apart from all other conditions. This is accomplished also, and the result expressed in money figures, by stating the cost per million B.t.u. added to the water as received by the boiler, to give the steam delivered by the boiler.

There is yet another way in which the results of boiler plant operation have been expressed, namely, by stating each month the cost per 1000 pounds of steam. This is not quite an exact expression, for steam varies in heat content, but it is a very useful figure, for in the individual plant the average steam pressure is likely to be not very different from period to period, and even as pressures rise or fall the heat units per pound of steam change very gradually, the changes in sensible and latent heat respectively largely offsetting each other. But to determine the cost per 1000 pounds of steam necessitates, of course, an exact coal charge and an exact statement of steam produced. It does not deal at all with British thermal units in either. As to the importance, however, of the British thermal unit accounting, I may quote from an article on "Ford Practice at River Rouge" in *Industrial Management*, March, 1923, that "B.t.u. per kilowatt hour are known exactly and checked almost hourly."

All the results stated by all the foregoing methods can be obtained by simple calculations from the boilers account as I have outlined it above. The single determination of the cost of 1,000,000 B.t.u. in the steam surpasses them all either in exactness or comprehensiveness. The only thing involved in the plan of accounts that I have outlined that is not involved in any of the foregoing is the accounting for exhaust steam, which I believe is imperatively necessary, and inescapable if there is to be an unbroken accounting for values.

Beyond the various determinations of chemists and engineers incorporated in the foregoing accounts, there are other determinations (particularly those expressed in the engineer's heat balance sheet) which can scarcely be introduced into the accounts at all. Nevertheless, no figures relative to the operations can be really foreign to any other figures relative thereto. Data from the engineer's records and from the accounting records, with one notation from still another source, should be combined to give a monthly summary in which conditions and results can be read together. For example:

(a) The weight of coal consumed, the average analysis and the average cost per ton.
(b) The most significant figures relative to capacities developed by the boilers operated, singly if possible.
(c) The total steam production expressed in thousands of pounds and millions B.t.u.
(d) The cost of steam per 1000 pounds and per million B.t.u.
(e) The engineer's heat balance sheet for the month, if a continuous balance is produced, or a representative heat balance sheet for a test period, or both.
(f) A memorandum by the works superintendent (or a summary thereof), checked by the power plant engineer, of interruptions of or deficiencies in the supply of power, attributable to steam plant operation.

The relations between boiler capacities developed (in comparison with "ratings" and economical "loads") and the various economies of operation, are dwelt upon everywhere by power plant engineers. The engineer's heat balance sheet takes the difference between the B.t.u. in the coal, and the same recovered in the steam, and accounts for this difference according to the various channels of loss.

These monthly summaries should then be tabulated in comparative form for the year. In the course of the two articles to follow they will be added to, so that in the end they will embrace the monthly unit costs of power in every form, and various figures of comparative economies by which the variations in ultimate costs are explained. It is not intended that they shall include tabulations of detailed operating expenses, for the compiling of which the accounts afford the fullest facilities, and which may be compiled elsewhere in whatever form and to whatever extent may be thought desirable. It is intended however that they shall state all final results and the essential conditions which determine them, with all attainable simplicity and clearness. And they will not have this character unless they are the product of the power department organization, of which the power accounting should be an integral part. *(To Be Continued)*

Shlick Beater Developments

Leo Shlick, papermaker and engineer of Boston, Mass., has developed a new low power beater for soft stocks. Especially designed for board liner and board filler, slow or free stocks for cylinder machines, wrapping, crepe tissue wadding, etc. This machine is claimed to use exceptionally low power. The 1500 pounder requires 35 hp. with the roll off the plate and 50 hp. with the roll down. Circulation obtained is 70 feet per minute at 7 per cent dry. Circulating at the rate of 50 feet per minute at 7 per cent dry, the machine takes 30 hp. with the roll off the plate and 45 hp. grinding.

For slushed stocks a new beating engine has been developed, whereby the roll has been reduced to a centrifugally acting disc, fitted with radial bars. The bedplate is also fitted with radial knives. When not grinding, this type of beater does not require more power than a high-efficiency pump, that is operating at a very low head and running at slow speed. The elimination of the roll reduces power consumption to a positive minimum. Circulation is swift, disc-pressure is adjustable, beating time is exceptionally short and by means of a switching arrangement, the disc-beater pumps the stock quickly into any tank that may be located at a higher level. Slow and free stock can be beaten in this machine. The beating action is faster than in a roll-equipped beater. However, this type of beater must be fed with stock in slushed or pulped form. It has been designed for exceptionally heavy consistencies and tests are being carried on to increase beating consistencies up to 18 per cent. This beater is also built as a bleacher and as such is lined. It takes 25 hp. when not grinding, and 40 hp. grinding for a 1500 lbs furnish.

For the beating of rag paper, Mr. Shlick has developed his Precision rag beating engine which has found great appreciation in New England rag mills. It is equipped with a special beating tackle, reducing the cutting action and increasing surface contact.

It is equipped with a special roll to circulate rag stock at the continuous rate of travel of 125 feet per minute at 7 to 8 per cent dry. It uses several bed-plates and as many as 4 can be used in the beater. All rag cover stock is beaten in 1¼ hours. Harder and the hardest grades take two to two and one-half times that long for the highest grades. The new tackle beats stock cool. High speeds of travel plus low surface contact-pressure have been found to prevent the blackening of rag stock and any other stock. These new rag beaters are equipped with beating control-devices, permitting close check on work done.

New Pressure Control Instrument

A new simplified Pressure Control Instrument (non-recording type) has just been announced by the Neilan Company, Ltd., manufacturers of automatic regulating and control devices. This new instrument is made to control pressures accurately in ranges from 0 to 5000 pounds. It fills the need for a pressure controller where it is not imperative to make a chart record. It is, of course, less

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A complete description of the many other novel improvements is given in the new bulletin No. 2050. A copy will be cheerfully sent by communicating with the Neilan Company Ltd., 641-651 Santa Fe Avenue, Los Angeles, Cal.

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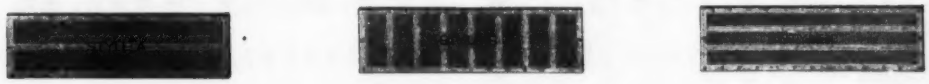

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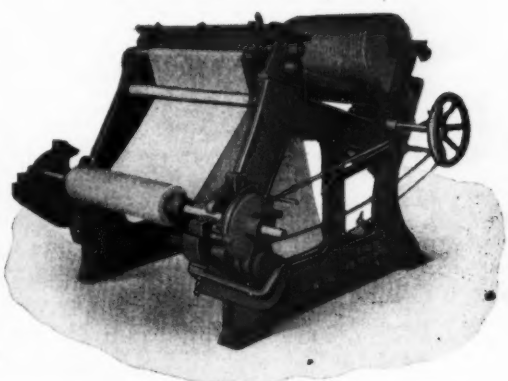

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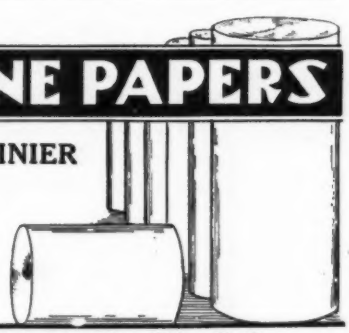

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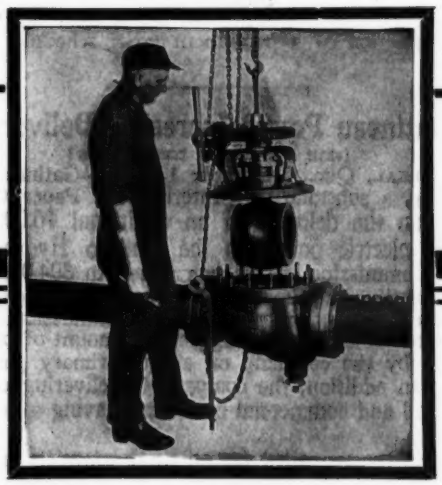

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J. Andersen & Co., Minequa, Svano, 3150 bls. sulphite, 533 tons.
Price & Pierce, Ltd., Minnequa, Svano, 900 bls. sulphite, 153 tons.
M. Gottesman & Co. Inc., Drottningholm, Gothenburg, 1500 bls. wood pulp.
J. Andersen & Co., Drottningholm, Gothenburg, 250 bls. sulphite.
Johaneson Wales & Sparre, Inc., Drottningholm, Gothenburg, 430 bls. wood pulp.
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Corn Exchange Bank, Tonsbergfjord, Flekkefjord, 400 bags.
Trust Co. of New Jersey, New Britain, Rotterdam, 1100 bags, 65000 ks.
State Chemical Co., Bilderdyk, Rotterdam, 1225 bags.

(Continued on page 54)

PAPER MAKERS' DRYER FELTS TRIUNE and MULTIPLE PLY

Serve every Felt Purpose in an efficient and satisfactory way.

60" to 288"

ENGLISH or BAKER WOVEN

Made in three, four, five and six ply—60" to 214" wide.

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FITCHBURG, MASS.

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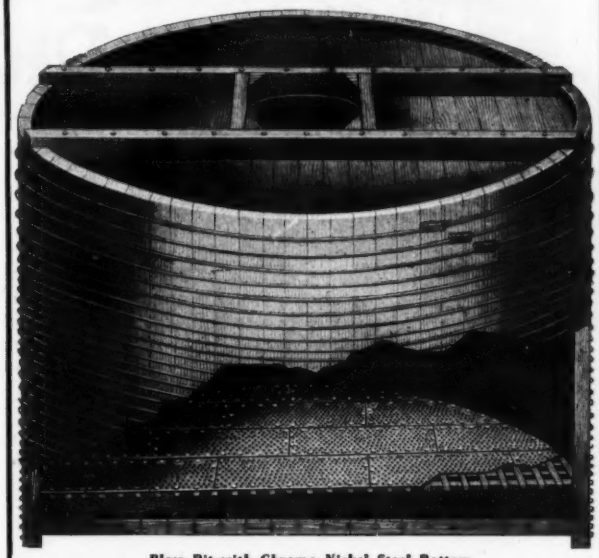
CHROME NICKEL STEEL DRAINER BOTTOMS



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Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

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BULKLEY, DUNTON & COMPANY

75-77 Duane St., N. Y., and direct

Imports of Paper and Paper Stock

(Continued from page 52)

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 28, 1931

Parsons & Whittemore, Inc., Braheholm, Gothenburg, 825 bls. wood pulp.
M. Gottesman & Co. Inc., Braheholm, Gothenburg, 1350 bls. wood pulp.
Russell McCandless, Braheholm, Gothenburg, 300 bls. wood pulp.
H. G. Lichtenstein, Toba Maru, Kobe, 25 bls. wipers.

NEWPORT NEWS IMPORTS

WEEK ENDING NOVEMBER 28, 1931

Perkins Goodwin & Co., Braheholm, Gothenburg, 5000 bls. kraft pulp.
Johaneson Wales & Sparre, Inc., Braheholm, Gothenburg, 598 bls. kraft soda pulp.
M. Gottesman & Co. Inc., Gonzenheim, Sweden, 1625 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 28, 1931

Lagerloef Trading Co., Sagauche, Helsingfors, 400 bls. sulphite, 68 tons.
——, Sagauche, Wiborg, 8274 bls. sulphite, 1546 tons.
Castle & Overton, Inc., Sagauche, Wiborg, 2027 bls. sulphite, 405 tons.
Lancaster News, Sagauche, Kotka, 52 rolls news print.
——, Sagauche, Kotka, 780 bls. sulphate, 156 tons; 430 bls. sulphite, 86 tons.
Lagerloef Trading Co., Sagauche, Kotka, 333 bls. wood pulpboards, 52 tons; 875 bls. wood pulp, 175 tons.
Katzenstein & Keene, Inc., Vincent, Dunkirk, 397 bls. rags.
Hoffman Lion Mills, Toba Maru, Osaka, 40 bls. wipers.
J. M. Hagy Waste Works, Toba Maru, Osaka, 50 bls. wipers.
Stora Kopparberg Corp., Minnequa, Skutskar, 2050 bls. wood pulp, 416 tons.
Perkins Goodwin & Co., Minequa, Norrsundet, 2000 bls. sulphate, 406 tons.
Perkins Goodwin & Co., Minequa, Sundsvall, 1250 bls. sulphite.
Perkins Goodwin & Co., Minnequa, Hernosand, 1875 bls. wood pulp, 375 tons.
Price & Pierce, Ltd., Minequa, Ohrviken, 6750 bls. wood pulp, 1125 tons.
——, Cabo Tortosa, Seville, 113 bls. rags.
E. J. Keller Co. Inc., Wytheville, ——, 85 bls. rags.

BOSTON IMPORTS

WEEK ENDING NOVEMBER 28, 1931

J. Andersen & Co., Consul Corfitzon, Hernosand, 1200 bls. sulphite, 200 tons.
Perkins Goodwin & Co., Consul Corfitzon, Hernosand, 650 bls. wood pulp, 130 tons.
E. M. Sergeant & Co., Consul Corfitzon, Hernosand 150 bls. sulphate, 25 tons.
Stora Kopparberg Corp., Consul Corfitzon, Gefle, 1000 bls. wood pulp, 200 tons.
Pagel Horton & Co. Inc., Consul Corfitzon, Gefle, 4550 bls. sulphite, 460 tons.
Perkins Goodwin & Co., Consul Corfitzon, Norrsundet, 1625 bls. sulphate, 330 tons.
J. B. Moors & Co., Andania, Liverpool, 245 bags hide cuttings.
G. F. Malcolm & Co., Andania, Liverpool, 15 cs. tissue paper.
M. Gottesman & Co. Inc., Braheholm, Gothenburg, 300 bls. sulphite.

PORTLAND IMPORTS

WEEK ENDING NOVEMBER 28, 1931

M. Gottesman & Co. Inc., Braheholm, Gothenburg, 6000 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING NOVEMBER 28, 1931

G. W. Rueff Inc., Braheholm, Gothenburg, 200 rolls paper.
Parsons & Whittemore, Inc., Braheholm, Gothenburg, 332 rolls news print.

Badger Wood Plug Co. Chartered

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 1, 1931—The new company established at Appleton, Wis., by Arthur L. Herwig to manufacture paper roll plugs will be known as the Badger Wood Plug Company, according to articles of incorporation filed with the Secretary of State. Mr. Herwig, Dr. D. S. Runnels and Mrs. Lillian Runnels are the incorporators. The company will be capitalized at 100 shares of common stock, par value $100, or a total of $10,000. A former car mover plant is being remodeled as quarters for the new industry.

British Tariff and Canada's Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 1, 1931—Will the new tariff impost in Great Britain open up a large new market for the products of Canada's paper-making industry? That is a question which is exercising the minds of executives here at the present time. The new duties put substantial handicaps on the imports into the United Kingdom of a wide variety of manufactures from foreign sources while leaving imports from the British Empire to enter free, and among these manufactures paper is by far the most important so far as Canada is concerned. Of the articles which are affected Canada exported to Britain last year about $11,000,000 worth, news print alone accounting for $7,700,00. Britain's total imports of paper and paper manufactures amounted to between $25,000,000 and $30,000,000, and the largest item in this was news print, Canada and Newfoundland supplying about equal quantities, and Scandinavia about $13,000,000 worth. It would appear, therefore, that a market of approximately $13,000,000 has been opened to Empire sources by the new British order, as well as a substantial market for other classes of paper products. But this is by no means certain. A large new plant was recently established in England for the manufacture of news print, and moreover Britain is already a competitor of Canada for the supply of news print in the over-seas market, as has recently been brought to mind by the action of New Zealand publishers in deciding henceforth to import at least two-thirds of their requirements of news print from Great Britain, in retaliation for the action of Canada in putting a prohibitive tariff on New Zealand butter entering Canada. The general opinion is inclined to the belief that the new duties will tend to switch orders to mills in the United Kingdom rather than to Canada, and further doubts as to possible benefits to Canada arise from the fact that the new duties are for six months only, pending the compilation of a permanent tariff schedule in Great Britain.

Gatineau Power Increases Deliveries

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 1, 1931—Gatineau Power Company, a subsidiary of International Paper Company, has begun the delivery of an additional 16.000 hp. of primary electric power to the Ontario Hydro-Electric Power Commission. This has raised to 304,000 hp. the total quantity of primary power now being delivered by Gatineau Power Company to the Commission, and increased to 453,800 hp. the aggregate amount of power being sold by the company on all its primary power contracts. In addition, the company is delivering energy to residential and commercial customers having a demand of 16,000 hp.

Electric energy called for on these contracts is supplied from an interconnected system of hydro-electric plants on the Ottawa, Gatineau and other tributaries of the Ottawa, having a capacity of 541,000 hp. installed and in operation. Of this capacity, 436,000 hp. is in operation in the Paugan, Chelsea and Farmers plants of the company on the Gatineau River, and the balance, 105,000 hp. in its stations on the Ottawa and other tributaries. In addition, Gatineau Power Company has two more plants in Quebec and one in New Brunswick which raise its total installed capacity to 645,500 hp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, December 2, 1931.

Conditions in the local paper market are practically unchanged. Demand for the various standard grades of paper has improved slightly but is below normal for the time of the year. Supplies are moving into consumption in fairly satisfactory volume. The price situation on many of the grades is disappointing and signs of definite improvement are wanting.

Production of news print paper has expanded somewhat and is now being maintained at approximately 60 per cent of rated capacity in the United States and Canada, according to statistics gathered by the News Print Service Bureau. Shipments are going forward in fairly heavy volume. The price situation, however, continues involved, and reports of concessions are frequent.

Some improvement was noticed in the paper board market. The box board output was slightly larger than in the preceding week. Prices are considered too low, in most quarters. The fine paper market is only moderately active, with prices on the various grades rather weak. The coarse paper market is irregular and kraft wrapping paper quotations continue easy.

Mechanical Pulp

Steadiness prevails in the ground wood pulp market. Offerings of both domestic and imported mechanical pulp are about sufficient to take care of current requirements. Accumulations are not excessive, due to some extent to curtailed production here and abroad. Prices are generally holding to previously quoted levels, without difficulty.

Chemical Pulp

Trading in the chemical pulp market was fairly active during the past week. Inquiries for the various grades of imported and domestic chemical pulp for 1932 delivery are fairly frequent and should materialize in some good orders. Prospects of a Swedish pulp mill workers' strike at the beginning of the new year are having some effect on the price situation.

Old Rope and Bagging

Quietness prevails in the old rope market. Paper mill demand for domestic and foreign old manila rope is decidedly restricted at present. Small mixed rope is only moving slowly. Prices are practically unchanged. The bagging market is somewhat steadier. Although demand for gunny and scrap is light, prices are firmer than of late.

Rags

The domestic rag market continues dull and listless. Little interest is being shown by the paper mills in the various grades of cotton rags. Roofing grades, however, are in slightly better request, due to seasonal causes. Quotations on paper making rags are easier. The imported rag market continues unsettled, due to fluctuations in foreign exchange.

Waste Paper

Further weaknesses developed in the paper stock market. Hard white shavings, book stock, and No. 1 white news, are the only grades which are holding firm at present. Board mill demand for the lower grades of waste paper has slackened. Strictly folded news is now being offered at from .30 to .35, while No. 1 mixed paper is selling at from .20 to .25.

Twine

Demand for the various grades of twine continues fairly persistent with the approach of the holiday season. Sales are running well up to the average of the preceding year at this period. Prices are generally holding to previously quoted levels although competition is intensive.

BADGER MILLS IMPROVE POSITION

(Continued from page 13)

process and not something that becomes a reality over night. It requires constant thought and the more thought it is given by executives and workers, the sooner it will become a reality. He said the movement has not yet obtained the impetus necessary to put such a program across successfully but industry is nearing such a condition.

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., presided at meetings last week at Madison, Wis., of the Inter-Denominational Industrial Relations committee, of which he is a member. The committee held conferences on unemployment, welfare and other subjects to improve labor conditions.

An accident of an unfortunate nature caused the death of Raymond Vils, an unmarried man 22 years old, in the wax room of the Thilmany Pulp and Paper Company, Kaukauna, Wis., last week. While a half ton roll of paper was being lifted by a hoist he was operating, the supporting cable broke. The roll crushed the workman's head, fracturing his skull and causing instant death.

Belgo Minority Institute Action

MONTREAL, Que., December 1, 1931—A minority group of Belgo-Canadian Paper Company shareholders has entered an action in the Superior Court at Montreal against the proposed arrangement between the company and its shareholders to take over stock in the newly-formed Consolidated Paper Corporation, and until this action is concluded the complete acquisition of all the undertakings of Canada Power and Paper cannot be accomplished by Consolidated Paper Corporation. The contention is that the preferred shareholders of Belgo have not been adequately treated. Under the reorganization scheme each share of Belgo preferred was to be exchanged for three shares of no par value common stock in the new company. The complainants contend that the allotment should be made on the basis of $100 bonds of the new company and two shares of no par value common stock for each share of preferred. It is further contended that the vote of Belgo shareholders was taken in an improper manner after threats and warnings.

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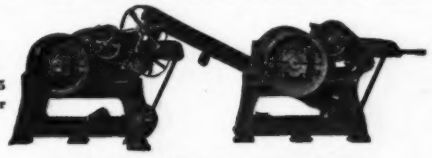
GIANT The Standard of the World for 60 Years

Giant Rag Cutters have capacities of from 1 to 5 tons per hour



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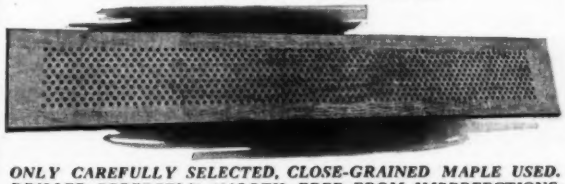

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THE MOORE & WHITE COMPANY
Paper Machinery Builders Philadelphia, U. S. A.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, December 2, 1931.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule, without difficulty. The pulp is quoted at from $42.50 to $45 per ton, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. The contract movement is fairly heavy. Prices are generally holding to formerly quoted levels. Bleaching powder is quoted at from $1.75 to $2 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues quiet. Domestic standard ground is quoted at 7½ cents and finely ground at 8 cents per pound. Argentine standard ground is selling at 8½ cents and finely ground at 9½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is fairly persistent. Prices are holding to formerly quoted levels. Solid caustic soda is offered at from $2.50 to $2.55; while the flake and the ground are selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is displaying a steadier trend. Contract shipments are moving in fairly good volume. Imported china clay is still quoted at from $11 to $13 per ton. Domestic paper making clay is selling at from $7 to $11 per ton, at mine.

CHLORINE.—Most of the business transacted in the chlorine market was along routine lines. The contract movement is normal. Prices are holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market was less active and prices declined. The grades of gum rosin used in the paper mills are now quoted at from $4 to $4.15 per 280 pounds in barrels, at works. Wood rosin is selling at $4 per 280 pounds, in barrels, on dock.

SALT CAKE.—Paper mill demand for salt cake during the past week was restricted. Salt cake is still quoted at from $15 to $16; chrome salt cake at from $13 to $14 per ton, in bulk, at works. Imported salt cake is selling at from $15 to $15.50 per ton, ship side.

SODA ASH.—Contract orders for soda ash are being booked for next year at the levels now prevailing. Demand is mainly seasonal. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1; in bags, $1.25; and in barrels, $1.38.

STARCH.—The starch market has not yet been affected by the action of the grain market. Supplies are moving into consumption with regularity. Special paper making starch is still quoted at $2.77, in bags; and at $3.04, in barrels, per 100 pounds, at works.

SULPHATE OF ALUMINA.—No radical changes were reported in the sulphate of alumina market. Prices are generally unaltered. Commercial grades are quoted at from $1.25 to $1.49; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Production of talc is being maintained in sufficient volume to take care of current requirements. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at mine; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	7.50	@38.00
Bonds	6.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	6.75	@11.00
Book, Cased—		
S. & S. C.	5.25	@ —
M. F.	5.00	@ —
Coated and Enamel	6.75	@10.25
Lithograph	7.25	@11.75
Tissues—Per Ream—		
White No. 1	.65	@ .70
Anti-Tarnish M. G. only	.65	@ .70
Colored	.70	@ .90
White No. 2	.55	@ .60
Kraft	.65	@ .70
Manila	.55	@ .60
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.00	@ 5.25
No. 2 Wood	3.50	@ 4.00
Butchers	3.37½	@ —
Fibre Papers—		
No. 1 Fibre	4.25	@ 5.50
No. 2 Fibre	4.00	@ 4.75
Common Bogus	1.50	@ 3.00
Screenings	2.00	@ 3.00
Card Middies	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs., No. 1	.09¼	@ —
No. 2	.11¼	@ —
Bleached, basis 20 lbs.	.11¼	@ —
(Delivered New York)		
News, per ton—		
Rolls, contract	57.00	@ —
Rolls, spot	57.00	@ —
Sheets	62.00	@ —
Side Runs	42.00	@46.00
Kraft—		
No. 1 Domestic	4.50	@ 5.75
No. 2 Domestic	3.00	@ 4.25
Southern	2.75	@ 4.00
Imported	6.00	@ 7.00
Boards—per ton—		
News	26.00	@27.50
Straw	34.50	@45.00
Chip	25.00	@27.50
Binders' Boards	62.00	@70.00
Standard 85 Test Liner	32.50	@35.00
Sgl. Mla. Lt. Chip	37.50	@42.50
(F. o. b. Mill)		
Wood Pulp Boards	70.00	@80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	24.00	26.00
Dry	25.00	@26.50
(F. o. b. Mill)		
No. 1 Domestic	25.00	@30.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	2.40	@ 3.50
Easy Bleaching	2.00	@ 2.10
No. 1 strong unbleached	1.75	@ 2.15
Mitscherlich unbleached	1.80	@ 2.10
No. 2 strong unbleached	1.70	@ 1.80
No. 1 Kraft	1.50	@ 1.75
No. 2 Kraft	1.40	@ 1.50
Sulphate—		
Bleached	2.75	@ 3.25
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	2.25	@ 4.50
Easy Bleaching	2.15	@ 2.35
News	1.80	@ 2.50
Mitscherlich	2.40	@ 2.55
Kraft (Domestic)	1.60	@ 2.75
(Delivered Paper Mills)		
Soda Bleached	2.75	@ —

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	6.50	@ 7.00
New White, No. 2	5.50	@ 6.00
Silesias No. 1	5.25	@ 5.50
New Unbleached	7.00	@ 7.50
New Blue Prints	4.00	@ 4.50
New Soft Blacks	3.50	@ 4.00
Blue Overall	5.00	@ 5.25
Fancy	3.00	@ 3.50
Washables	2.75	@ 3.00
Mixed Khaki Cuttings	3.50	@ 4.00
Pink Corset Cuttings	5.00	@ 5.50
O. D. Khaki Cuttings	4.50	@ 4.75
Men's Corduroy	3.00	@ 3.50
New Mixed Blacks	3.00	@ 3.25

Old Rags

White, No. 1—		
Repacked	5.25	@ 5.75
Miscellaneous	4.25	@ 4.75
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.30	@ 2.50
St. Soiled, White	1.50	@ 1.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.65	@ 1.85
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.25	@ 1.30
No. 1	1.25	@ 1.30
No. 2	.90	@ 1.00
No. 3	.70	@ .80
No. 4	.65	@ .70
No. 5A	.50	@ .60

Foreign Rags

New Rags

New Dark Cuttings	1.75	@ 1.85
New Mixed Cuttings	2.00	@ 2.20
New Light Silesias	4.50	@ 4.75
Light Flannelettes	4.25	@ 4.50
Unbleached Cuttings	6.00	@ 6.25
New White Cuttings	5.25	@ 5.50
New Light Oxfords	4.00	@ 4.25
New Light Prints	3.00	@ 3.25

Old Rags

No. 1 White Linens	6.00	@ 6.25
No. 2 White Linens	5.00	@ 5.25
No. 3 White Linens	3.50	@ 4.00
No. 4 White Linens	2.00	@ 2.50
No. 1 White Cotton	4.25	@ 4.75
No. 2 White Cotton	3.25	@ 3.50
No. 3 White Cotton	2.50	@ 3.00
No. 4 White Cotton	1.45	@ 1.60
Extra Light Prints	1.90	@ 2.10
Ord. Light Prints	1.60	@ 1.75
Med. Light Prints	1.40	@ 1.55
Dutch Blue Cottons	1.50	@ 1.60
French Blue Linens	2.25	@ 2.40
German Blue Linens	2.00	@ 2.10
German Blue Cottons	1.35	@ 1.40
Checks and Blues	1.25	@ 1.30
Lindsay Garments	.90	@ 1.00
Dark Cottons	.70	@ .75
Old Shopperies	.65	@ .70
New Shopperies	.60	@ .65
French Blues	1.40	@ 1.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50	@ 1.55
Domestic	1.60	@ 1.65
Wool Tares, light	1.05	@ 1.10
Wool Tares, heavy	1.10	@ 1.15
Bright Bagging	1.05	@ 1.10
Small Mixed Rope	.90	@ 1.00
Manila Rope—		
Foreign	1.65	@ 1.75
Domestic	1.75	@ 1.90
New Burlap Cut	1.70	@ 1.80
Hessian Jute Threads—		
Foreign	2.60	@ 2.75
Domestic	2.80	@ 3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	2.65	@ 2.85
Hard, white, No. 2	2.10	@ 2.20
Soft, white, No. 1	1.85	@ 1.95
White envelope cuttings	2.20	@ 2.30
Flat Stock—		
Stitchless	.70	@ .80
Overissue Mag	.70	@ .80
Solid Flat Book	.60	@ .70
Crumpled No. 1	.45	@ .50
Solid Book Ledger	1.75	@ 1.85
Ledger Stock	.60	@ .70
New B. B. Chips	.20	@ .30
Manilas—		
New Env. Cut	1.75	@ 1.85
New Cuttings	1.40	@ 1.50
Extra No. 1 old	1.05	@ 1.15
Print	.45	@ .50
Bogus Wrapper	.45	@ .50
Container	.25	@ .30
Old Kraft Machine—		
Compressed bales	1.05	@ 1.15
News—		
No. 1 White News	1.60	@ 1.65
Strictly Overissue	.35	@ .45
Strictly Folded	.30	@ .35
No. 1 Mixed Paper	.20	@ .25
Common Paper		Nominal

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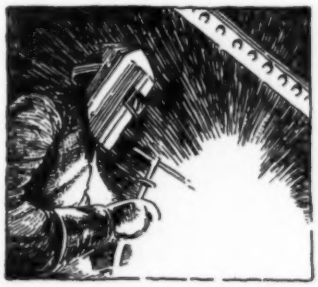

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Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.13	@	—
No. 2	.11	@	—
Tube Rope—			
4-ply and larger	.09	@	—
Fine Tube Rope—			
4-ply	.11	@	—
3-ply	.12	@	—
2-ply	.13	@	—
Paper Makers Twine Balls	.07	@	—
Box Twine, 2-3 ply	.07	@	.08
Jute Rope	.09	@	.10
Amer. Hemp, 6	.27	@	.29
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.21	@	.22

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¼
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manilt	.04	@	.04½
No. 1 Kraft	4.50	@	5.00
Southern Kraft	3.00	@	3.25
No. 2 Kraft	3.00	@	3.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.07	@	.07¼
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	57.00	@	—
Sheets	62.00	@	—
Boards, per ton—			
Plain Chip	30.00	@	35.00
Solid News	32.50	@	37.50
Manila Lined Chip	40.00	@	45.00
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	1.95	@	2.05
No. 1 Soft White	1.80	@	1.90
Ledger & Writings	.60	@	.70
Solid Books	.60	@	.70
Blanks	1.40	@	1.55
Krafts	1.15	@	1.25
New Kraft Cuts	1.30	@	1.45
Manila Env. Cuts	1.40	@	1.50
Ex. No. 1 Manila	1.25	@	1.30
Print Manila	.40	@	.45
Overissue News	.40	@	.50
Old Newspapers—			
No. 1	.35	@	.45
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.25	@	.30
No. 2	.25	@	.25
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.07	@	.40
Writings—			
Superfine	.12	@	.18
Extra fine	.16	@	.22
Fine	.15	@	.26
Fine, No. 2	.12	@	.25
Fine, No. 3	.07	@	.20
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.07	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.03¼	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.04
Southern Kraft No. 2	—	@	.03¾
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	58.00	@	62.00
Straw Board	50.00	@	—
News Board	30.00	@	32.00
Chip Board	25.00	@	27.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	63.00	@	65.00
Carload lots	62.00	@	67.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.06	@	.06½
New White, No. 2	.05	@	.05½
Light Silesias	.05	@	.05½
Silesias, No. 1	.06	@	.08
Black Silesias, soft	.05	@	—
New Unbleached	.06	@	.06½
Washable, No. 1	.02½	@	.03
Blue Overall	.05	@	.05½
Cottons—According to grades—			
Washable, No. 2	.02	@	.02½
New Blue	.02	@	.02½
Fancy	.03	@	.03¼
New Black Soft	.03	@	.03½
New Light Seconds	.01¾	@	.02
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O.D.	.04½	@	.05
No. 2 Mixed	.03½	@	.04
Corduroy	.02½	@	.03
New Canvas	.06½	@	.07
New Black Mixed	.03	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	3.50	@	4.00
Miscellaneous	2.25	@	2.75
M. G.	4.50	@	—
Thirds and Blues—			
Miscellaneous	1.25	@	1.50
Repacked	1.75	@	2.00
Black Stockings (Export)	3.80	@	4.00
Roofing Stock—			
Foreign No. 1	1.15	@	1.25
Repacked	.80	@	.90

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	2.25	@	2.50
Sisal Rope	1.25	@	1.50
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.50
No. Hard White	2.00	@	2.25
No. 1 Soft White	1.75	@	2.00
No. 2 Soft White	1.40	@	1.50
No. 1 Mixed	.75	@	.80
No. 2 Mixed	.50	@	.55
Solid Ledger Stock	1.35	@	1.40
Writing Paper	.80	@	1.00
No. 1 Books, heavy	.70	@	.75
No. 2 Books, light	Normal		
No. 1 New Manila	1.60	@	1.75
No. 1 Old Manila	1.25	@	1.30
Print Manila	.50	@	.55
Container Manila	.40	@	.45
Old Kraft	1.10	@	1.20
Common Paper	.30	@	.40
No. 1 Mixed Paper	.35	@	.45
Straw Board, Chip	.35	@	.45
Binders Board, Chip	.35	@	.45
Corrugated Board	.45	@	.50
Overissue News	.50	@	.55
Old Newspaper	.30	@	.35

TORONTO

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag Content	.15	@	.30
All Rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04½	@	.05½
No. 2 Kraft	—	@	.03
(F. o. b. Boston)			
Southern Kraft	—	@	.03
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	—	@	56.50
Straw Board, rolls	.009	—	@52.50
Straw Board in Sheets, basis 35s to 70s	—	@	50.00
Filled News Board	27.50	@	30.00
Chip Board	27.50	@	—
Chip Board (Creasing)	27.50	@	30.00
Single Manila Lined Chip	40.00	@	45.00
Single White, Patent Coated News Board—			
Binder	52.50	@	60.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	67.50	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.50
No. 2 Hard White	2.25	@	2.50
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.50	@	.55
No. 1 Mixed	.75	@	.85
Solid Ledger Books	1.75	@	2.00
Overissue Ledger Stock	1.35	@	1.60
Mixed Ledgers	1.15	@	1.30
No. 1 Books, heavy	.65	@	.75
No. 1 Books, light	—	@	.45
Crumpled Stitchless Book Stock	1.00	@	1.25
Manila Env. Cuttings	1.85	@	2.00
No. 1 Old Manila	—	@	1.00
White Blank News	1.50	@	1.60
Kraft No. 1	1.00	@	1.10
Manila	.90	@	1.00
No. 1 Mixed Paper	.25	@	.35
Print Manila	.40	@	.45
Overissue News	.40	@	.45
Old Newspapers	.32½	@	.40
Box Board, Chip	.20	@	.25
Corrugated Boxes	.37½	@	.47½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.25
Domestic	1.40	@	1.50
Manila Rope—			
Foreign	1.50	@	1.75
Domestic	1.75	@	2.00
Transmission Rope	1.25	@	1.40
Mixed String	.35	@	.40
Jute Rope	1.00	@	1.15
Jute Carpet Threads	.75	@	.90
Bleachery Burlap	2.50	@	2.75
No. 1 Scrap Burlap	1.10	@	1.25
Scrap Sisal	1.35	@	1.45
Scrap Sisal for shredding	1.50	@	1.60
Wool Tares, heavy	1.25	@	1.30
New Burlap Cutting	1.50	@	1.75
Australian Pouches	2.00	@	2.25
Heavy Baling Bagging	1.50	@	1.60
Paper Mill Bagging	.90	@	1.05
Bagging No. 2	.50	@	—
No. 1 Burlap	—	@	3.50

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1.	.06½	@	.07
New White No. 2.	—	@	.06
Silesias No. 1	.06	@	.06¾
New Black Silesias	.02½	@	.02¾
New Unbleached	—	@	.08
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades—			
Blue Overalls	.05	@	.06
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04½
O. D. Khaki	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	—	@	4.00
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.50	@	2.75
Thirds and Blues—			
Repacked	1.60	@	1.80
Miscellaneous	1.00	@	1.20
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	—	@	.63
No. 2	—	@	.58
No. 3	—	@	.53

Foreign Rags

Dark Cottons	—	@	.70
(F. o. b. Boston)			
New No. 1 White Shirt Cuttings	6.50	@	6.75
Dutch Blues	—	@	1.80
New Checks & Blues	4.00	@	4.50
Old Fustians	1.55	@	1.65
Old Linsey Garments	.80	@	.90

BOSTON

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¾	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.11¼	@	—
No. 2 Colored	.09	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (Carloads)	6.65	@	—
No. 3 M. F. (Carloads)	6.20	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.65	@	—
No. 4 S. C. (carloads)	5.70	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.50	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.60	@	—
White Wrap	5.10	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.60	@	—
Fiber	5.60	@	—
Kraft, M. F.	5.98	@	—
Kraft No. 2	5.60	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	56.50	@	57.00
Sheets	61.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	50.00	@	—
Sulphite, news grade	44.00	@	—
Sulphite, bleached	62.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.60	@	—
Soft White	2.40	@	—
White Blk. News	1.40	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	1.05	@	—
Ledgers and Writings	—	@	—
Manilas—			
New Manila Cut	1.40	@	—
Printed Manilas	.50	@	—
Kraft	1.65	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.45	@	—
No. 1 Mixed Paper	.35	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06¾

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

SIXTIETH YEAR

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